

# HEAT PUMPS

<u>i-BX-N-Y</u>	<u>004M - 035T</u>
<u>i-KIR-MTD-Y</u>	<u>0075t - 0151t</u>
<u>AWR-HT-Y</u>	<u>0122 - 0302</u>
<u>AWR-HT-Y</u>	<u>0404 - 0604</u>
<u>i-NX-N-Y</u>	<u>0151P - 0502P</u>
<u>NX-N-Y</u>	<u>0152P - 0812P</u>
<u>NX-N-Y</u>	<u>0604P - 1204P</u>
<u>NECS-N-Y</u>	<u>0202T - 0612T</u>
<u>NX-N-Y</u>	<u>0604T - 1204T</u>
<u>NECS-N-Y</u>	<u>1314 - 2116</u>
<u>FOCS-N-Y</u>	<u>2022 - 4822</u>
<u>FOCS-N-G05-Y</u>	<u>2022 - 4822</u>
<u>NX-CN-Y</u>	<u>0072 - 1104</u>
<u>i-KI-MTD-Y</u>	<u>0075t - 0151t</u>
<u>AW-HT-Y</u>	<u>0122 - 0302</u>
<u>AW-HT-Y</u>	<u>0404 - 0604</u>
<u>WWR MTD2-Y</u>	<u>0011ms - 0121ts</u>
<u>NX-WN-Y</u>	<u>0122 - 1204</u>
<u>WW-HT-Y</u>	<u>0071 - 0302</u>
<u>EW-HT-Y</u>	<u>0152 - 0612</u>
<u>NX-W-Y /H</u>	<u>0122 - 1204</u>
<u>FOCS-W-Y /H</u>	<u>0401 - 1302</u>
<u>FOCS2-W-Y /H</u>	<u>1301 - 9604</u>
<u>FOCS2-W-G05-Y /H</u>	<u>1301 - 9604</u>
<u>i-FX-W (1+i)-Y /H</u>	<u>1402 - 4652</u>
<u>i-FX-W (1+i)-G05-Y/H</u>	<u>1402 - 4652</u>



**Outdoor unit for the production of chilled/hot water with variable speed (Inverter Driven) Scroll compressors, optimized for R410A in a single-circuit configuration, axial-flow fans, condensing coil with copper tubes and aluminum fins, plate heat exchanger on water side and electronic expansion valve as standard equipment. Flexible and reliable unit; it easily adapts itself to different thermal load conditions thanks to the precise temperature control together with the use of inverter technology. The high performance's level, both full and partial load, is achieved thanks to the accurate unit's design and to the use of variable speed (inverter) motor.**

**The units provide heating, cooling and domestic hot water production. Particular care is taken for winter mode, that thanks to the Inverter technology is guaranteed beyond traditional units working limits.**

### Control



#### NADISYSTEM

The keypad features function controls and a complete LCD display for viewing data and activating the unit, via a multilevel menu. The electronic board allows you to manage:

- Wired remote keypad, backlit display complete with remote temperature
- outdoor air temperature sensor on board for climatic curve
- hot water production by external three-way valve (accessory)
- electric heater for possible integration for HW tank
- gas boiler or electric heater in substitution or in addition for space heating
- night mode to limit the noise level of the units. Noise level is reduced limiting the maximum speed of the compressor and fans.
- up to 4 heat pumps in cascade (with the accessories N-CM)
- the defrost adopts a proprietary self-adaptive logic, which features the monitoring of numerous operational parameters. This allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.

### Refrigerant



### Versions

- Basic

### Features

#### ErP READY

The highest level of efficiency at part load can meet and exceed the minimum seasonal efficiency for heating, SCOP according with the eco-sustainable design requirements for all products using energy.

#### SYSTEM EFFICIENCY

The unit is designed as a system: all components are regulated using proprietary control's logic for the highest efficiency.

#### HIGH EFFICIENCY AT PARTIAL LOAD

High seasonal efficiency in both heating and cooling mode, using DC inverter technology to modulate compressor operation and deliver the exact amount of energy based on the actual needs of the installation. High efficiency for low energy consumption during the operating hours.

#### HIGH EFFICIENCY COMPONENTS

In terms of improving performance and reducing power consumption, the electronic thermostatic valve is an important component that maximises system efficiency, same for the choice the hydronic kit with inverter water pump and the modulating the fans speed as standard equipments.

#### EXTENSIVE OPERATING LIMITS

Particular care is taken for winter mode, that thanks to inverter technology is guaranteed beyond traditional units working limits, supplying hot water up to 60°C and down to -20°external air.

#### INTEGRATED HYDRONIC MODULE

The integrated hydronic include all the water circuit components (anti-freeze electrical heater on plate heat exchanger, air vents, flow switch, water filter, safety valve, EC water pumps, expansion tank) so as to optimize installation space, times and costs.

### Accessories

- Remote keyboard
- Wired room terminal with backlit display, and with temperature and umidity probe
- Cascade management kit
- DHW temperature probe and Buffer temperature probe
- Copper-Aluminum heat exchanger coils with epoxy treatment
- Copper-Copper heat exchanger coils
- Buffer tank
- Domestic hot water storage tank
- Electric heater for the base and for condensate collecting tray to avoid freezing
- Serial card RS485 for ModBus
- Rubber anti-vibration mounting kit

<b>i-BX-N-Y M</b>			<b>004M</b>	<b>006M</b>	<b>008M</b>	<b>010</b>	<b>013</b>
Power supply	V/ph/Hz		230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1)	kW	4,200	5,900	7,500	9,900	12,40
Total power input	(1)	kW	1,548	2,080	2,720	3,640	4,540
EER	(1)	kW/kW	2,710	2,837	2,757	2,720	2,731
ESEER	(1)	kW/kW	4,240	4,320	4,450	4,210	4,240
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2)	kW	4,200	5,900	7,510	9,910	12,40
EER	(1)(2)	kW/kW	2,760	2,880	2,810	2,730	2,750
ESEER	(1)(2)	kW/kW	4,610	4,560	4,830	4,260	4,370
Cooling energy class			C	C	C	C	C
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(3)	kW	4,628	6,365	8,508	10,99	14,34
Total power input	(3)	kW	1,509	2,026	2,651	3,649	4,529
COP	(3)	kW/kW	3,066	3,133	3,211	3,014	3,157
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(3)(2)	kW	4,620	6,370	8,500	11,00	14,30
COP	(3)(2)	kW/kW	3,120	3,190	3,260	3,020	3,190
Cooling energy class			B	B	A	B	B
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Process refrigeration at high temperature</b>							
Prated,c	(4)	kW	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>							
<b>Process refrigeration at medium temperature</b>							
Prated,c	(5)	kW	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(7)	kW	3,40	4,80	6,02	8,18	10,4
SCOP	(7)(8)		3,59	3,89	4,15	3,54	3,81
Performance $\eta_s$	(7)(9)	%	140	153	163	139	149
Seasonal efficiency class	(7)		A+	A++	A++	A+	A+
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	0,201	0,282	0,359	0,473	0,593
Available unit's head	(1)	kPa	51,4	39,8	66,5	57,7	56,6
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(3)	l/s	0,223	0,307	0,411	0,531	0,692
Available unit's head	(3)	kPa	47,9	35,4	57,9	54,1	51,1
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.		N°	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	1,47	2,20	3,70	3,95	4,45
<b>NOISE LEVEL</b>							
Sound power level in cooling	(10)(11)	dB(A)	64	65	66	69	70
Sound power level in heating	(10)(12)	dB(A)	64	65	66	69	70
Sound Pressure	(13)	dB(A)	50	51	51	54	55
<b>SIZE AND WEIGHT</b>							
A	(14)	mm	900	900	900	900	900
B	(14)	mm	370	370	420	420	420
H	(14)	mm	940	940	1240	1240	1390
Operating weight	(14)	kg	80	85	100	115	135

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.

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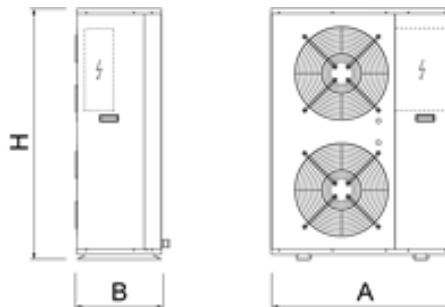
<b>i-BX-N-Y T</b>			<b>010T</b>	<b>013T</b>	<b>015T</b>	<b>020T</b>	<b>025T</b>	<b>030T</b>	<b>035T</b>
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
<b>COOLING ONLY (GROSS VALUE)</b>									
Cooling capacity	(1)	kW	10,50	12,80	14,70	18,70	24,70	29,40	35,10
Total power input	(1)	kW	3,640	4,540	5,240	7,000	8,990	10,50	12,70
EER	(1)	kW/kW	2,885	2,819	2,805	2,671	2,747	2,800	2,764
ESEER	(1)	kW/kW	4,240	4,490	4,310	3,880	3,930	3,890	3,930
<b>COOLING ONLY (EN14511 VALUE)</b>									
Cooling capacity	(1)(2)	kW	10,50	12,80	14,70	18,70	24,70	29,50	35,20
EER	(1)(2)	kW/kW	2,890	2,840	2,820	2,700	2,770	2,840	2,790
ESEER	(1)(2)	kW/kW	4,290	4,580	4,380	3,990	4,030	4,000	4,010
Cooling energy class			C	C	C	C	C	C	C
<b>HEATING ONLY (GROSS VALUE)</b>									
Total heating capacity	(3)	kW	11,40	14,67	17,22	21,70	26,14	32,28	38,07
Total power input	(3)	kW	3,662	4,548	5,149	6,904	8,313	10,34	11,98
COP	(3)	kW/kW	3,115	3,231	3,340	3,145	3,141	3,136	3,175
<b>HEATING ONLY (EN14511 VALUE)</b>									
Total heating capacity	(3)(2)	kW	11,40	14,70	17,20	21,70	26,10	32,20	38,00
COP	(3)(2)	kW/kW	3,120	3,250	3,360	3,160	3,160	3,130	3,190
Cooling energy class			B	A	A	B	B	B	B
<b>ENERGY EFFICIENCY</b>									
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>									
<b>Process refrigeration at high temperature</b>									
Prated,c	(4)	kW	-	-	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>									
<b>Process refrigeration at medium temperature</b>									
Prated,c	(5)	kW	-	-	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>									
PDesign	(7)	kW	8,48	10,9	12,3	16,5	21,9	24,7	28,1
SCOP	(7)(8)		3,64	3,99	3,66	3,56	3,77	3,80	3,70
Performance $\eta_s$	(7)(9)	%	142	157	144	139	148	149	145
Seasonal efficiency class	(7)		A+	A++	A+	A+	A+	A+	A+
<b>EXCHANGERS</b>									
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>									
Water flow	(1)	l/s	0,502	0,612	0,703	0,894	1,181	1,406	1,679
Available unit's head	(1)	kPa	53,3	53,0	78,7	74,6	61,5	91,3	73,5
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>									
Water flow	(3)	l/s	0,550	0,708	0,831	1,047	1,262	1,558	1,838
Available unit's head	(3)	kPa	50,2	47,1	71,5	60,3	55,0	80,5	61,8
<b>REFRIGERANT CIRCUIT</b>									
Compressors nr.		N°	1	1	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	3,95	4,45	5,10	6,70	8,10	10,0	11,0
<b>NOISE LEVEL</b>									
Sound power level in cooling	(10)(11)	dB(A)	69	70	74	74	75	76	77
Sound power level in heating	(10)(12)	dB(A)	69	70	74	74	75	76	77
Sound Pressure	(13)	dB(A)	54	55	59	59	59	60	61
<b>SIZE AND WEIGHT</b>									
A	(14)	mm	900	900	1450	1450	1450	1450	1700
B	(14)	mm	420	420	550	550	550	550	650
H	(14)	mm	1240	1390	1200	1200	1700	1700	1700
Operating weight	(14)	kg	115	135	180	205	265	290	325

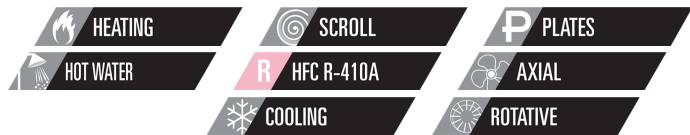
**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
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- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.

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**Dimensional drawing**



# i-KIR-MTD-Y

0075t - 0151t 15,59-40,50 kW

Air cooled reversible heat pump, with axial fans and inverter driven compressor, for heating water up to 60°C



The system is based on an packaged external units with integrated hydronic module and by an internal unit with the electronic regulation. The heat pumps provide heating, cooling and domestic hot water production. Particular care is taken for winter mode, that thanks to the Inverter technology is guaranteed beyond traditional units working limits, water production up to 60°C.

The reverse-cycle heat pumps feature high seasonal efficiency in both heating and cooling mode, using DC inverter technology to modulate compressor operation and deliver the exact amount of energy based on the actual needs of the installation.

The unit can be coupled with traditional systems or radiant panels, guaranteeing always very high energy efficiency. Installation is strongly simplified thanks to the integrated hydronic module (optional).

## Control



## NADISYSTEM

Electronic control Nadisystem provides great application flexibility. The remote keyboard kit wired and outdoor air temperature sensors allow dynamic control of delivery temperature water, increasing the energy efficiency. The electronic board allows you to manage:

- Wired remote control, backlit display and with remote temperature and humidity probe
- outdoor temperature sensor for water plant side modular set point compensation
- a zone of direct heating for radiator, floor heating or fan coil
- a zone with mix valve for floor heating
- Electrical heating element for possible integration and anti-legionella cycle for cylinder
- boiler or electric heater in substitution or in addition
- the room controller can customise up to six time bands. The presence of the programmable timer allows the creation of an operating profile containing up to 6 time bands
- up to 4 heat pump in cascade (with N-CM component)
- several solutions through appropriate configurations of the controller and use of dedicated extension modules (accessorie), up to 5 zone

## Refrigerant



## Versions

B Basic

## Features

### WIDE RANGE

Extended capacity range.

### SYSTEM EFFICIENCY

The unit is designed as a system: all components are regulated using proprietary control's logic for the highest efficiency.

### HIGH EFFICIENCY AT PARTIAL LOAD

High seasonal efficiency in both heating and cooling mode, using DC inverter technology to modulate compressor operation and deliver the exact amount of energy based on the actual needs of the installation. High efficiency for low energy consumption during the operating hours.

### HIGH EFFICIENCY COMPONENTS

In terms of improving performance and reducing power consumption, the electronic thermostatic valve is an important component that maximises system efficiency, same for the choice the hydronic kit with inverter water pump (optional) and the modulating the fans speed.

### EXTENSIVE OPERATING LIMITS

Particular care is taken for winter mode, that thanks to inverter technology is guaranteed beyond traditional units working limits, supplying hot water up to 60°C and down to -20°external air.

## Accessories

- Integrated hydronic module with on/off pump or high efficiency inverter pump
- Wired room terminal with backlit display, and with temperature and umidity probe
- Extension module for system configuration
- Three-way valve for domestic hot water
- Electric heater of integration for the heating system
- Electric heater for hot water cylinder, of integration and for anti-legionellosis
- Cascade management kit
- Serial card RS485 for ModBus
- Hot water cylinder 300,500 liters
- 300 liters thermal store for domestic hot water, for DOMH2O kit
- 300,500,1000 liters thermal store for domestic hot water with solar heat exchanger, for DOMH2O kit
- DOMH2O15 e DOMH2O24 kit for domestic hot water with external plate heat exchanger and pump
- Copper-Copper heat exchanger coils
- Copper-Aluminum heat exchanger coils with epoxy treatment
- Electric heater for the base and for condensate collecting tray to avoid freezing

## APPLICATION HYDRONIC TERMINAL

<b>i-KIR-MTD-Y</b>		<b>0075t</b>	<b>0091t</b>	<b>0095t</b>	<b>0101t</b>	<b>0121t</b>	<b>0135t</b>	<b>0151t</b>
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
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	(1) kW	15,59	19,35	22,13	23,95	26,45	28,68	30,45
Total power input	(1) kW	6,540	6,929	8,838	10,24	10,10	12,53	12,61
EER	(1) kW/kW	2,385	2,785	2,500	2,353	2,614	2,296	2,421
ESEER	(1) kW/kW	4,300	4,440	4,370	4,280	4,690	4,650	4,650
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	15,50	19,20	22,00	23,90	26,30	28,60	30,40
EER	(1)(2) kW/kW	2,350	2,750	2,460	2,320	2,590	2,270	2,390
ESEER	(1)(2) kW/kW	4,080	4,250	4,140	4,040	4,520	4,450	4,450
<b>HEATING ONLY (GROSS VALUE)</b>								
Total heating capacity	(3) kW	21,62	30,35	32,86	35,63	35,85	39,19	44,39
Total power input	(3) kW	8,297	9,448	10,92	12,33	11,43	13,01	14,67
COP	(3) kW/kW	2,602	3,217	3,018	2,894	3,140	3,015	3,020
<b>HEATING ONLY (EN14511 VALUE)</b>								
Total heating capacity	(3)(2) kW	20,50	24,00	27,80	30,30	32,10	35,20	38,30
COP	(3)(2) kW/kW	2,760	3,340	3,070	2,940	3,390	3,260	3,270
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>								
<b>Process refrigeration at high temperature</b>								
Prated,c	(4) kW	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>								
<b>Process refrigeration at medium temperature</b>								
Prated,c	(5) kW	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>								
PDesign	(7) kW	16,0	23,1	25,2	27,4	25,8	28,4	32,4
SCOP	(7)(8)	3,58	4,05	4,00	3,94	4,13	4,12	4,28
Performance ηs	(7)(9) %	140	159	157	155	162	162	168
Seasonal efficiency class	(7)	A+	A++	A++	A++	A++	A++	A++
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	(1) l/s	0,745	0,925	1,059	1,145	1,265	1,371	1,456
Pressure drop	(1) kPa	13,3	12,2	16,0	18,7	10,4	12,2	13,7
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>								
Water flow	(3) l/s	0,983	1,155	1,333	1,455	1,546	1,692	1,839
Pressure drop	(3) kPa	23,2	19,0	25,3	30,2	15,5	18,6	21,9
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	1	1	1	1	1	1	1
No. Circuits	N°	1	1	1	1	1	1	1
Refrigerant charge	kg	5,90	9,30	9,30	9,30	10,8	10,8	10,8
<b>NOISE LEVEL</b>								
Sound power level in cooling	(10)(11) dB(A)	71	72	74	75	76	77	77
Sound power level in heating	(10)(12) dB(A)	72	73	75	76	77	78	78
Sound Pressure	(13) dB(A)	55	56	58	59	60	61	61
<b>SIZE AND WEIGHT</b>								
A	(14) mm	1470	1470	1470	1470	1720	1720	1720
B	(14) mm	570	570	570	570	670	670	670
H	(14) mm	1200	1700	1700	1700	1700	1700	1700
Operating weight	(14) kg	220	285	285	285	330	330	330

### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.  
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## APPLICATION FLOOR HEATING

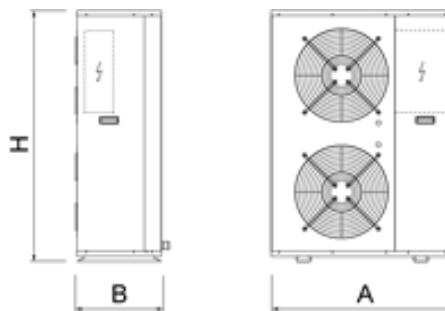
<b>i-KIR-MTD-Y</b>		<b>0075t</b>	<b>0091t</b>	<b>0095t</b>	<b>0101t</b>	<b>0121t</b>	<b>0135t</b>	<b>0151t</b>
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	(1) kW	20,78	26,29	29,85	32,15	35,42	38,14	40,50
Total power input	(1) kW	6,915	7,215	9,304	10,85	10,64	13,32	13,41
EER	(1) kW/kW	3,010	3,648	3,215	2,945	3,340	2,865	3,022
ESEER	(1) kW/kW	4,300	4,440	4,370	4,280	4,690	4,650	4,650
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	19,30	24,30	27,50	30,20	30,40	34,30	36,20
EER	(1)(2) kW/kW	3,210	3,880	3,590	3,320	3,880	3,690	3,510
ESEER	(1)(2) kW/kW	4,080	4,250	4,140	4,040	4,520	4,450	4,450
<b>HEATING ONLY (GROSS VALUE)</b>								
Total heating capacity	(3) kW	21,74	30,93	33,27	35,96	36,75	40,06	45,35
Total power input	(3) kW	6,833	7,866	9,073	10,22	9,357	10,72	12,08
COP	(3) kW/kW	3,177	3,926	3,671	3,529	3,932	3,748	3,752
<b>HEATING ONLY (EN14511 VALUE)</b>								
Total heating capacity	(3)(2) kW	19,80	24,60	28,30	31,10	32,30	35,60	39,40
COP	(3)(2) kW/kW	3,570	4,090	3,830	3,690	4,060	3,840	3,990
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>								
<b>Process refrigeration at high temperature</b>								
Prated,c	(4) kW	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>								
<b>Process refrigeration at medium temperature</b>								
Prated,c	(5) kW	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>								
PDesign	(7) kW	16,0	23,1	25,2	27,4	25,8	28,4	32,4
SCOP	(7)(8)	3,58	4,05	4,00	3,94	4,13	4,12	4,28
Performance ηs	(7)(9) %	140	159	157	155	162	162	168
Seasonal efficiency class	(7)	A+	A++	A++	A++	A++	A++	A++
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	(1) l/s	0,932	1,168	1,329	1,456	1,461	1,649	1,746
Pressure drop	(1) kPa	20,8	19,4	25,2	30,2	13,8	17,6	19,8
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>								
Water flow	(3) l/s	0,947	1,180	1,353	1,485	1,549	1,710	1,884
Pressure drop	(3) kPa	21,5	19,8	26,1	31,4	15,5	19,0	23,0
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	1	1	1	1	1	1	1
No. Circuits	N°	1	1	1	1	1	1	1
Refrigerant charge	kg	5,90	9,30	9,30	9,30	10,8	10,8	10,8
<b>NOISE LEVEL</b>								
Sound power level in cooling	(10)(11) dB(A)	71	72	74	75	76	77	77
Sound power level in heating	(10)(12) dB(A)	72	73	75	76	77	78	78
Sound Pressure	(13) dB(A)	55	56	58	59	60	61	61
<b>SIZE AND WEIGHT</b>								
A	(14) mm	1470	1470	1470	1470	1720	1720	1720
B	(14) mm	570	570	570	570	670	670	670
H	(14) mm	1200	1700	1700	1700	1700	1700	1700
Operating weight	(14) kg	220	285	285	285	330	330	330

## Notes

- Plant (side) cooling exchanger water (in/out) 23°C/18°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

## Dimensional drawing





# AWR-HT-Y

0122 - 0302 34,00-91,70 kW

High efficiency reversible heat pump, air source for outdoor installation, high water temperature



**AWR-HT-Y units represent the best solution for systems in which there is the need to produce chilled water and hot water, even for DHW production. The EVI compressor technology with additional steam injection in the compressing cycle assures a water temperature of 65°C and operating limits as low as -20°C. Neither probes nor connections pipes to wells are needed; the installation is simple, this is a suitable solution for all applications.**

## Control



### W3000SE

W3000SE controller dedicated to heat pump applications features a incorporated logic for high temperature hot water production. The keypad features function controls and a complete LCD display for viewing data and activating the unit via a multilevel menu, with settable language. The controller provides temperature control for the heating and cooling systems, as well as for domestic hot water. These different temperatures are managed automatically based on the different conditions in which the system operates, with the possibility to assign specific levels of priority to domestic hot water production, depending on the needs of the application. Diagnostics include complete alarm management, with "black-box" functions (via PC) and alarm log (display or PC) for best analysis of unit behaviour. For multiple units' systems, differentiated device management means just a certain portion of the capacity installed can be dedicated to domestic water production, thus ensuring more efficient energy distribution and simultaneous water delivery to the different distribution systems.

- Built-in clock to create operating profiles up to 4 typical days and 10 time bands, essential for efficient programming of energy production and for managing the Legionella prevention cycles.
- Proprietary self-adaptive logic for defrost involving monitoring of multiple operating and climate parameters. This reduces the number and duration of defrosts, consequently increasing overall energy efficiency.
- Supervision available using proprietary devices or by integration into third party systems using ModBus, BACnet, BACnet-over-IP and Echelon LonWorks protocols.
- Dedicated wall-mounted keypad for remote control of all the functions.

## Refrigerant



## Versions

CA-E	Premium efficiency version: Class A enhanced	LN-CA-E	Premium efficiency version, Class A enhanced, low-noise
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## Configurations

- Basic function
- D Partial condensing heat recovery function

## Features

### PREMIUM 'CLASS A' EFFICIENCY

The full range is available with a premium efficiency rating, over the Class A (in heating). CA-E and LN-CA-E versions guarantee premium levels of efficiency, making this range the best solution for both cooling and heating process applications.

### WIDE OPERATING RANGE

Production of high temperature hot water up to 65°C for space heating and sanitary purposes. The unit can operate as standard down to -20°C outdoor temperature.

### MAXIMUM RELIABILITY

Maximum operating reliability, thanks to two main features:

- two independent circuits for all sizes;
- system to prevent formation of ice on the coil, ensuring shorter and more efficient defrost cycles.

### MODULAR CONFIGURATION

Modular configuration with capacity extension up to 400kW for medium- and high-capacity installations. Ability of managing different thermal loads according to the requirements of both heating and the domestic hot water systems.

AWR-HT-Y / CA-E			0122	0152	0202	0262	0302
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1)	kW	34,10	43,80	60,30	76,40	91,70
Total power input	(1)	kW	11,60	14,70	20,40	25,80	31,30
EER	(1)	kW/kW	2,940	2,980	2,956	2,961	2,930
ESEER	(1)	kW/kW	3,400	3,340	3,400	3,380	3,350
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2)	kW	34,00	43,70	60,20	76,20	91,40
EER	(1)(2)	kW/kW	2,910	2,950	2,940	2,930	2,890
ESEER	(1)(2)	kW/kW	3,340	3,260	3,330	3,300	3,270
Cooling energy class			B	B	B	B	B
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(3)	kW	38,00	51,30	68,80	84,90	102,0
Total power input	(3)	kW	10,70	14,40	19,40	23,60	27,70
COP	(3)	kW/kW	3,551	3,562	3,546	3,597	3,682
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(2)(3)	kW	38,10	51,40	69,00	85,20	102,3
COP	(2)(3)	kW/kW	3,530	3,540	3,520	3,560	3,650
Cooling energy class			A	A	A	A	A
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Process refrigeration at high temperature</b>							
Prated,c	(4)	kW	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>							
<b>Process refrigeration at medium temperature</b>							
Prated,c	(5)	kW	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(7)	kW	28,4	33,8	47,5	58,5	70,6
SCOP	(7)(8)		3,24	3,16	3,22	3,26	3,35
Performance ηs	(7)(9)	%	127	124	126	127	131
Seasonal efficiency class	(7)		A+	A+	A+	A+	-
PDesign	(10)	kW	30,5	36,8	50,7	63,3	74,7
SCOP	(10)(8)		3,00	2,98	3,01	3,05	3,12
Performance ηs	(10)(9)	%	117	116	117	119	122
Seasonal efficiency class	(10)		A+	A+	A+	A+	-
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	1,631	2,095	2,884	3,654	4,385
Pressure drop	(1)	kPa	8,10	9,21	11,0	14,5	18,2
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(3)	l/s	1,834	2,476	3,321	4,098	4,924
Pressure drop	(3)	kPa	10,2	12,9	14,6	18,3	22,9
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.		N°	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2
Refrigerant charge		kg	13,0	22,0	27,6	35,0	42,0
<b>NOISE LEVEL</b>							
Sound power level in cooling	(11)(12)	dB(A)	84	86	87	87	87
Sound power level in heating	(11)(13)	dB(A)	84	86	87	87	87
Sound Pressure	(14)	dB(A)	67	69	70	69	69
<b>SIZE AND WEIGHT</b>							
A	(15)	mm	1695	2195	2745	2745	2745
B	(15)	mm	1120	1120	1120	1120	1120
H	(15)	mm	1465	1465	1465	1665	1665
Operating weight	(15)	kg	510	750	870	940	1030

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R407C [GWP<sub>100</sub> 1774] fluorinated greenhouse gases.

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AWR-HT-Y / LN-CA-E			0122	0152	0202	0262	0302
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1)	kW	34,00	44,46	60,20	76,20	90,40
Total power input	(1)	kW	11,60	14,90	20,50	26,10	32,90
EER	(1)	kW/kW	2,931	2,987	2,937	2,920	2,748
ESEER	(1)	kW/kW	3,380	3,310	3,360	3,340	3,180
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2)	kW	33,90	44,30	60,10	76,00	90,10
EER	(1)(2)	kW/kW	2,900	2,940	2,910	2,890	2,720
ESEER	(1)(2)	kW/kW	3,330	3,220	3,290	3,280	3,100
Cooling energy class			B	B	B	C	C
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(3)	kW	38,40	50,43	69,40	85,80	100,3
Total power input	(3)	kW	10,70	14,30	19,40	23,70	27,60
COP	(3)	kW/kW	3,589	3,524	3,577	3,620	3,634
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(2)(3)	kW	38,50	50,60	69,60	86,10	100,6
COP	(2)(3)	kW/kW	3,560	3,490	3,550	3,590	3,600
Cooling energy class			A	A	A	A	A
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Process refrigeration at high temperature</b>							
Prated,c	(4)	kW	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>							
<b>Process refrigeration at medium temperature</b>							
Prated,c	(5)	kW	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(7)	kW	26,8	34,5	47,8	59,3	70,3
SCOP	(7)(8)		3,26	3,14	3,24	3,29	3,35
Performance ηs	(7)(9)	%	127	123	127	128	131
Seasonal efficiency class	(7)		A+	A+	A+	A+	-
PDesign	(10)	kW	28,8	37,1	50,9	63,3	75,2
SCOP	(10)(8)		3,00	2,97	3,02	3,05	3,11
Performance ηs	(10)(9)	%	117	116	118	119	121
Seasonal efficiency class	(10)		A+	A+	A+	A+	-
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	1,626	2,126	2,879	3,644	4,323
Pressure drop	(1)	kPa	8,05	17,7	11,0	14,5	17,7
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(3)	l/s	1,854	2,434	3,350	4,142	4,842
Pressure drop	(3)	kPa	10,5	23,2	14,8	18,7	22,2
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.		N°	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2
Refrigerant charge		kg	16,0	25,3	35,3	44,1	52,0
<b>NOISE LEVEL</b>							
Sound power level in cooling	(11)(12)	dB(A)	80	82	83	83	84
Sound power level in heating	(11)(13)	dB(A)	82	84	85	85	86
Sound Pressure	(14)	dB(A)	48	50	51	51	52
<b>SIZE AND WEIGHT</b>							
A	(15)	mm	1695	2195	2745	2745	2745
B	(15)	mm	1120	1120	1120	1120	1120
H	(15)	mm	1465	1465	1465	1665	1665
Operating weight	(15)	kg	550	780	940	1010	1060

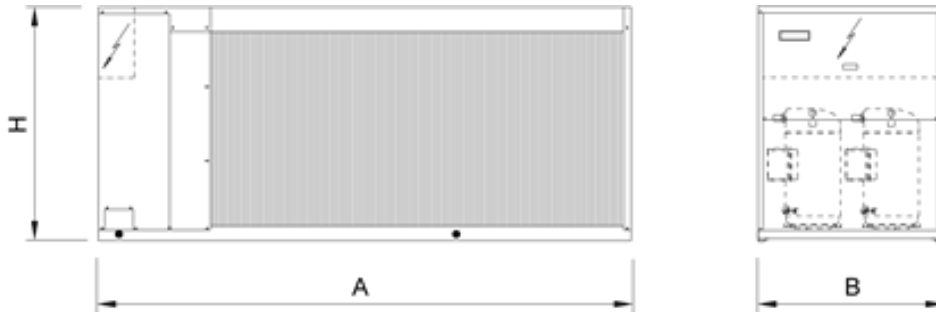
**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- 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.
- Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

**Dimensional drawing**



# AWR-HT-Y

0404 - 0604 116,3-181,2 kW

High efficiency reversible heat pump, air source for outdoor installation, high water temperature



**AWR-HT-Y units represent the best solution for systems in which there is the need to produce chilled water and hot water, even for DHW production. The EVI compressor technology with additional steam injection in the compressing cycle assures a water temperature of 65°C and operating limits as low as -20°C. Neither probes nor connections pipes to wells are needed; the installation is simple, this is a suitable solution for all applications.**

## Control



### W3000SE

W3000SE controller dedicated to heat pump applications features a incorporated logic for high temperature hot water production. The keypad features function controls and a complete LCD display for viewing data and activating the unit via a multilevel menu, with settable language. The controller provides temperature control for the heating and cooling systems, as well as for domestic hot water. These different temperatures are managed automatically based on the different conditions in which the system operates, with the possibility to assign specific levels of priority to domestic hot water production, depending on the needs of the application. Diagnostics include complete alarm management, with "black-box" functions (via PC) and alarm log (display or PC) for best analysis of unit behaviour. For multiple units' systems, differentiated device management means just a certain portion of the capacity installed can be dedicated to domestic water production, thus ensuring more efficient energy distribution and simultaneous water delivery to the different distribution systems.

- Built-in clock to create operating profiles up to 4 typical days and 10 time bands, essential for efficient programming of energy production and for managing the Legionella prevention cycles.
- Proprietary self-adaptive logic for defrost involving monitoring of multiple operating and climate parameters. This reduces the number and duration of defrosts, consequently increasing overall energy efficiency.
- Supervision available using proprietary devices or by integration into third party systems using ModBus, BACnet, BACnet-over-IP and Echelon LonWorks protocols.
- Dedicated wall-mounted keypad for remote control of all the functions.

## Refrigerant



## Versions

CA-E	Premium efficiency version: Class A enhanced	LN-CA-E	Premium efficiency version, Class A enhanced, low-noise
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## Configurations

- Basic function
- D Partial condensing heat recovery function

## Features

### PREMIUM 'CLASS A' EFFICIENCY

The full range is available with a premium efficiency rating, over the Class A (in heating). CA-E and LN-CA-E versions guarantee premium levels of efficiency, making this range the best solution for both cooling and heating process applications.

### WIDE OPERATING RANGE

Production of high temperature hot water up to 65°C for space heating and sanitary purposes. The unit can operate as standard down to -20°C outdoor temperature.

### MAXIMUM RELIABILITY

Maximum operating reliability, thanks to two main features:

- two independent circuits for all sizes;
- system to prevent formation of ice on the coil, ensuring shorter and more efficient defrost cycles.

### MODULAR CONFIGURATION

Modular configuration with capacity extension up to 1000 kW for medium- and high-capacity installations. Ability of managing different thermal loads according to the requirements of both heating and the domestic hot water systems.

AWR-HT-Y / CA-E			0404	0524	0604
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50
<b>COOLING ONLY (GROSS VALUE)</b>					
Cooling capacity	(1)	kW	119,7	146,5	181,2
Total power input	(1)	kW	43,80	53,30	65,80
EER	(1)	kW/kW	2,733	2,749	2,754
ESEER	(1)	kW/kW	3,340	3,420	3,310
<b>COOLING ONLY (EN14511 VALUE)</b>					
Cooling capacity	(1)(2)	kW	119,4	146,1	180,7
EER	(1)(2)	kW/kW	2,710	2,720	2,730
ESEER	(1)(2)	kW/kW	3,250	3,330	3,230
Cooling energy class			C	C	C
<b>HEATING ONLY (GROSS VALUE)</b>					
Total heating capacity	(3)	kW	134,9	171,0	204,8
Total power input	(3)	kW	39,60	48,10	58,90
COP	(3)	kW/kW	3,407	3,555	3,477
<b>HEATING ONLY (EN14511 VALUE)</b>					
Total heating capacity	(2)(3)	kW	135,4	171,6	205,5
COP	(2)(3)	kW/kW	3,380	3,520	3,450
Cooling energy class			A	A	A
<b>ENERGY EFFICIENCY</b>					
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>					
<b>Process refrigeration at high temperature</b>					
Prated,c	(4)	kW	-	-	-
SEPR	(4)(6)		-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>					
<b>Process refrigeration at medium temperature</b>					
Prated,c	(5)	kW	-	-	-
SEPR	(5)(6)		-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>					
PDesign	(7)	kW	92,6	117	139
SCOP	(7)(8)		3,23	3,40	3,29
Performance $\eta_s$	(7)(9)	%	126	133	129
Seasonal efficiency class	(7)		-	-	-
PDesign	(10)	kW	98,9	126	148
SCOP	(10)(8)		3,02	3,19	3,08
Performance $\eta_s$	(10)(9)	%	118	125	120
Seasonal efficiency class	(10)		-	-	-
<b>EXCHANGERS</b>					
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>					
Water flow	(1)	l/s	5,724	7,006	8,665
Pressure drop	(1)	kPa	19,6	20,6	24,0
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>					
Water flow	(3)	l/s	6,512	8,254	9,886
Pressure drop	(3)	kPa	25,4	28,6	31,3
<b>REFRIGERANT CIRCUIT</b>					
Compressors nr.		N°	4	4	4
No. Circuits		N°	2	2	2
Refrigerant charge		kg	66,0	108	108
<b>NOISE LEVEL</b>					
Sound power level in cooling	(11)(12)	dB(A)	92	93	94
Sound power level in heating	(11)(13)	dB(A)	92	93	94
Sound Pressure	(14)	dB(A)	73	73	74
<b>SIZE AND WEIGHT</b>					
A	(15)	mm	3110	4110	4110
B	(15)	mm	2220	2220	2220
H	(15)	mm	2150	2150	2150
Operating weight	(15)	kg	1950	2400	2530

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R407C [GWP<sub>100</sub> 1774] fluorinated greenhouse gases.

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<b>AWR-HT-Y / LN-CA-E</b>		<b>0404</b>	<b>0524</b>	<b>0604</b>
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50
<b>COOLING ONLY (GROSS VALUE)</b>				
Cooling capacity	(1) kW	116,3	144,7	175,8
Total power input	(1) kW	42,00	52,20	63,20
EER	(1) kW/kW	2,769	2,772	2,782
ESEER	(1) kW/kW	3,390	3,470	3,370
<b>COOLING ONLY (EN14511 VALUE)</b>				
Cooling capacity	(1)(2) kW	116,0	144,3	175,3
EER	(1)(2) kW/kW	2,740	2,740	2,750
ESEER	(1)(2) kW/kW	3,310	3,370	3,280
Cooling energy class		C	C	C
<b>HEATING ONLY (GROSS VALUE)</b>				
Total heating capacity	(3) kW	134,9	171,0	204,8
Total power input	(3) kW	39,60	48,10	58,90
COP	(3) kW/kW	3,407	3,555	3,477
<b>HEATING ONLY (EN14511 VALUE)</b>				
Total heating capacity	(2)(3) kW	135,4	171,6	205,5
COP	(2)(3) kW/kW	3,380	3,520	3,450
Cooling energy class		A	A	A
<b>ENERGY EFFICIENCY</b>				
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>				
<b>Process refrigeration at high temperature</b>				
Prated,c	(4) kW	-	-	-
SEPR	(4)(6)	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>				
<b>Process refrigeration at medium temperature</b>				
Prated,c	(5) kW	-	-	-
SEPR	(5)(6)	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>				
PDesign	(7) kW	92,6	117	139
SCOP	(7)(8)	3,23	3,40	3,29
Performance $\eta_s$	(7)(9) %	126	133	129
Seasonal efficiency class	(7)	-	-	-
PDesign	(10) kW	98,9	126	148
SCOP	(10)(8)	3,02	3,19	3,08
Performance $\eta_s$	(10)(9) %	118	125	120
Seasonal efficiency class	(10)	-	-	-
<b>EXCHANGERS</b>				
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>				
Water flow	(1) l/s	5,562	6,920	8,407
Pressure drop	(1) kPa	18,5	20,1	22,6
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>				
Water flow	(3) l/s	6,512	8,254	9,886
Pressure drop	(3) kPa	25,4	28,6	31,3
<b>REFRIGERANT CIRCUIT</b>				
Compressors nr.	N°	4	4	4
No. Circuits	N°	2	2	2
Refrigerant charge	kg	70,0	110	110
<b>NOISE LEVEL</b>				
Sound power level in cooling	(11)(12) dB(A)	86	86	87
Sound power level in heating	(11)(13) dB(A)	88	88	89
Sound Pressure	(14) dB(A)	67	66	67
<b>SIZE AND WEIGHT</b>				
A	(15) mm	3110	4110	4110
B	(15) mm	2220	2220	2220
H	(15) mm	2150	2150	2150
Operating weight	(15) kg	1960	2410	2540

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

Dimensional drawing





**Outdoor unit for the production of chilled/hot water with fixed speed and variable speed (Inverter Driven) Scroll compressors, optimized for R410A in a single-circuit configuration, axial-flow fans, condensing coil with copper tubes and aluminum fins and electronic expansion valve as standard equipment. Flexible and reliable unit; it easily adapts itself to different thermal load conditions thanks to the precise temperature control together with the use of inverter technology. The high performance's level, both full and partial load, is achieved thanks to the accurate unit's design and to the use of fixed speed motor together with variable speed (inverter) motor.**

### Control



#### Electronic control W3000+

The brand new W3000+ controller offers advanced functions and algorithms. The Compact keypad, as standard equipment, features function controls and a complete LCD display for viewing data and activating the unit, via a multilevel menu, with settable display language. In addition to or as an alternative, the KIPLink is available - Keyboard In Your Pocket - is the innovative user interface based on WiFi technology that allows one to operate on the unit directly from the smartphone or tablet. Using KIPLink, it is possible to turn the unit on and off, adjust the set-point, plot the main operating variables, monitor in detail the status of the refrigerant circuits, the compressors, the fans and the pumps (if present) and display and reset the possible alarms. The regulation features the continuous modulation of capacity, based on sequential adjustment + DIP referring to the leaving water temperature (neutral zone adjustment + DIP on outlet temperature probe, for the 0151 size). Diagnostics include complete alarm management, with "blackbox" functions (via PC) and alarm log (display or PC) for best analysis of unit behaviour. The built-in clock can be used to create an operating profile containing up to 4 typical days and 10 time bands, essential for efficient programming of energy production. Optional proprietary devices can perform the adjustment of the resources in systems made of several units. Consumption metering and performance measurement are possible as well. The variable primary flow control is always available as per standard (VPF.E function). Supervision is available with different options, using proprietary devices or by integration into third party systems using ModBus, BACnet, BACnet-over-IP and Echelon LonWorks protocols. A dedicated wall-mounted keypad can be used for remote control of all the functions.

### Refrigerant



### Versions

- Basic
- SL Super-low noise version

### Configurations

- Basic function
- D Partial condensing heat recovery function

### Features

#### HIGH EFFICIENCY

Unit with high efficiency and reduced energy consumption, thanks to the inverter technology, contributing to lower operating costs and therefore achieving a quick return on investment.

#### VARIABLE PRIMARY FLOW

Energy saving due to variable pump speed management based on load demand and the variable flow assures the functioning of the units also with critical working conditions.

#### INTEGRATED HYDRONIC MODULE

The built-in hydronic module already contains the main water circuit components; it is available as option with single or twin in-line pump, for achieving low or high head, fixed or variable speed and buffer tank.

#### TWO SOUND EMISSION LEVELS

Two different acoustic versions are available to fit specific application requirements.

### Accessories

- Remote control keyboard (distance to 200m and to 500m)
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Compressor power factor correction
- Soft start
- Hydronic kit available in different configurations with 1 or 2 pumps fixed speed or variable speed and buffer tank
- VPF (Variable Primary Flow) system
- EC fans with electronic DC brushless motor
- LOW NOISE KIT (only on no silenced versions)
- User Limit Control (U.L.C.) allows the safe startup of the unit in critical conditions of water and air temperature.
- Night mode is a system setting to limit maximum noise level of the unit.
- Traditional coils with copper tubes and aluminium fins, also available with prepainted fins or Fin Guard Silver protective treatment.

i-NX-N-Y		0151P	0182P	0202P	0262P	0302P	0352P	0402P	0502P	
Power supply		V/ph/Hz 400/3+N/50 400/3+N/50 400/3+N/50 400/3+N/50 400/3/50 400/3/50 400/3/50 400/3/50								
<b>PERFORMANCE</b>										
<b>COOLING ONLY (GROSS VALUE)</b>										
Cooling capacity	(1)	kW	43,87	50,90	62,09	74,40	85,27	104,7	113,8	128,3
Total power input	(1)	kW	15,79	18,34	22,11	26,13	30,40	37,39	41,10	46,15
EER	(1)	kW/kW	2,778	2,781	2,810	2,851	2,806	2,799	2,769	2,783
ESEER	(1)	kW/kW	4,270	4,300	4,140	4,350	4,260	4,450	4,380	4,470
<b>COOLING ONLY (EN14511 VALUE)</b>										
Cooling capacity	(1)(2)	kW	43,60	50,60	61,70	74,00	84,90	104,2	113,3	127,7
EER	(1)(2)	kW/kW	2,710	2,720	2,750	2,790	2,760	2,750	2,720	2,730
ESEER	(1)(2)	kW/kW	4,000	4,000	3,860	4,060	4,010	4,160	4,100	4,200
Cooling energy class			C	C	C	C	C	C	C	C
<b>HEATING ONLY (GROSS VALUE)</b>										
Total heating capacity	(3)	kW	46,80	53,82	66,60	79,72	90,60	111,6	119,5	138,0
Total power input	(3)	kW	14,85	17,09	21,08	24,83	28,81	35,54	37,97	42,95
COP	(3)	kW/kW	3,141	3,146	3,156	3,214	3,146	3,144	3,145	3,209
<b>HEATING ONLY (EN14511 VALUE)</b>										
Total heating capacity	(2)(3)	kW	47,10	54,10	67,00	80,20	91,10	112,2	120,1	138,7
COP	(2)(3)	kW/kW	3,100	3,100	3,110	3,170	3,110	3,110	3,110	3,170
Cooling energy class			B	B	B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>										
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>										
<b>Process refrigeration at high temperature</b>										
Prated,c	(4)	kW	-	-	-	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>										
<b>Process refrigeration at medium temperature</b>										
Prated,c	(5)	kW	-	-	-	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>										
PDesign	(7)	kW	34,7	41,4	45,9	61,2	68,9	85,4	85,2	106
SCOP	(7)(8)		3,73	3,80	3,68	3,83	3,84	4,02	3,98	3,97
Performance $\eta_s$	(7)(9)	%	146	149	144	150	151	158	156	156
Seasonal efficiency class	(7)		A+	A+	A+	A++	A++	-	-	-
<b>EXCHANGERS</b>										
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>										
Water flow	(1)	l/s	2,098	2,434	2,969	3,558	4,078	5,008	5,442	6,137
Pressure drop	(1)	kPa	37,2	38,2	40,9	42,0	36,2	39,0	38,8	38,4
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>										
Water flow	(3)	l/s	2,259	2,598	3,215	3,848	4,373	5,387	5,768	6,659
Pressure drop	(3)	kPa	43,1	43,6	48,0	49,1	41,6	45,1	43,6	45,2
<b>REFRIGERANT CIRCUIT</b>										
Compressors nr.		N°	1	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1
Refrigerant charge		kg	14,4	19,5	22,9	27,1	26,8	38,7	39,2	50,9
<b>NOISE LEVEL</b>										
Sound Pressure	(10)	dB(A)	66	66	68	69	68	70	70	70
Sound power level in cooling	(11)(12)	dB(A)	84	84	86	87	87	89	89	89
Sound power level in heating	(11)(13)	dB(A)	84	84	85	86	87	89	89	89
<b>SIZE AND WEIGHT</b>										
Operating weight	(14)	kg	650	730	820	880	1030	1190	1210	1340
A	(14)	mm	2000	2000	2625	2625	3250	3250	3250	3875
B	(14)	mm	1350	1350	1350	1350	1350	1350	1350	1350
H	(14)	mm	2070	2070	2070	2070	2170	2170	2170	2170

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

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i-NX-N-Y /SL		0151P	0182P	0202P	0262P	0302P	0352P	0402P	0502P	
Power supply		V/ph/Hz 400/3+N/50 400/3+N/50 400/3+N/50 400/3/50 400/3/50 400/3/50 400/3/50 400/3/50								
<b>PERFORMANCE</b>										
<b>COOLING ONLY (GROSS VALUE)</b>										
Cooling capacity	(1)	kW	40,96	48,39	59,30	72,40	81,36	98,56	111,7	125,7
Total power input	(1)	kW	14,76	17,30	21,37	25,36	28,32	35,56	40,19	43,83
EER	(1)	kW/kW	2,770	2,798	2,771	2,850	2,876	2,770	2,779	2,870
ESEER	(1)	kW/kW	4,360	4,300	4,230	4,380	4,450	4,500	4,580	4,520
<b>COOLING ONLY (EN14511 VALUE)</b>										
Cooling capacity	(1)(2)	kW	40,80	48,10	59,00	72,00	81,00	98,20	111,2	125,1
EER	(1)(2)	kW/kW	2,720	2,740	2,720	2,790	2,820	2,730	2,730	2,820
ESEER	(1)(2)	kW/kW	4,110	4,020	3,970	4,080	4,180	4,250	4,320	4,250
Cooling energy class			C	C	C	C	C	C	C	C
<b>HEATING ONLY (GROSS VALUE)</b>										
Total heating capacity	(3)	kW	45,67	54,94	66,62	81,40	90,40	110,8	124,4	139,5
Total power input	(3)	kW	13,89	16,82	20,35	24,94	27,68	33,96	38,08	42,74
COP	(3)	kW/kW	3,288	3,268	3,281	3,269	3,264	3,259	3,265	3,267
<b>HEATING ONLY (EN14511 VALUE)</b>										
Total heating capacity	(2)(3)	kW	46,00	55,30	67,00	81,90	90,90	111,4	125,1	140,2
COP	(2)(3)	kW/kW	3,240	3,220	3,230	3,220	3,220	3,220	3,220	3,230
Cooling energy class			A	A	A	A	A	A	A	A
<b>ENERGY EFFICIENCY</b>										
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>										
<b>Process refrigeration at high temperature</b>										
Prated,c	(4)	kW	-	-	-	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>										
<b>Process refrigeration at medium temperature</b>										
Prated,c	(5)	kW	-	-	-	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>										
PDesign	(7)	kW	34,4	41,3	50,0	57,0	67,8	77,4	94,1	105
SCOP	(7)(8)		3,77	3,76	3,68	3,82	3,96	3,93	4,02	4,04
Performance ηs	(7)(9)	%	148	147	144	150	155	154	158	158
Seasonal efficiency class	(7)		A+	A+	A+	A++	A++	-	-	-
<b>EXCHANGERS</b>										
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>										
Water flow	(1)	l/s	1,959	2,314	2,836	3,462	3,891	4,713	5,341	6,010
Pressure drop	(1)	kPa	32,4	34,6	37,3	39,8	33,0	34,6	37,3	36,8
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>										
Water flow	(3)	l/s	2,205	2,652	3,216	3,929	4,364	5,348	6,004	6,732
Pressure drop	(3)	kPa	41,1	45,4	48,0	51,2	41,5	44,5	47,2	46,2
<b>REFRIGERANT CIRCUIT</b>										
Compressors nr.		N°	1	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1
Refrigerant charge		kg	18,8	25,4	26,2	26,6	37,6	37,0	49,9	61,0
<b>NOISE LEVEL</b>										
Sound Pressure	(10)	dB(A)	60	60	61	61	61	63	63	63
Sound power level in cooling	(11)(12)	dB(A)	78	78	79	80	80	82	82	82
Sound power level in heating	(11)(13)	dB(A)	78	78	79	80	80	82	82	82
<b>SIZE AND WEIGHT</b>										
Operating weight	(14)	kg	670	830	860	1010	1080	1260	1320	1460
A	(14)	mm	2000	2625	2625	3250	3250	3875	3875	4500
B	(14)	mm	1350	1350	1350	1350	1350	1350	1350	1350
H	(14)	mm	2070	2070	2070	2170	2170	2170	2170	2170

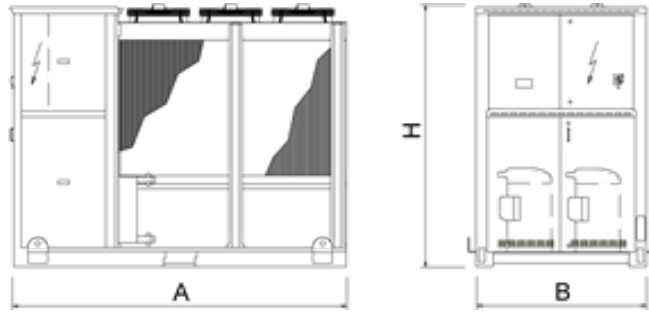
**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

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**Dimensional drawing**





Outdoor unit with heat pump for the production of chilled/hot water with hermetic rotary scroll compressors dedicated to the use of R410A, axial fans, plate heat exchanger, condensing coil with copper tubes and aluminum fins and thermostatic or electronic expansion valve, according to the version. The range is composed by units equipped with two compressors in a single-circuit configuration.

### Control



#### W3000 Base – W3000SE Compact

Two different versions of controllers are available:

**W3000 Base:** complete with keypad, easy-to-use interface and LCD display, menu with up to three languages (Italian and English come standard, a further language can be chosen within French, Spanish, German, Russian and Swedish)

**W3000SE Compact:** complete with keypad, easy-to-use interface and LCD display, multi-language menu, with selectable language setting on site. Internal clock also included. Both W3000 electronic controllers offer advanced functions and algorithms. The keypad features an easy-to-use interface and a complete LCD display, allowing to consult and intervene on the unit by means of a multi-level menu, with selectable language setting. Regulation based on the exclusive QuickMind algorithm, including self-adaptive control logics, beneficial in low water content systems. As alternatives the proportional- or proportional- integral regulations are also available. Complete alarm management, with the "black-box" and alarm logging functions for enhanced analysis of the unit operation (available on W3000SE Compact only).

For multiple units' systems, the regulation of the resources via optional proprietary devices, can be implemented. Energy metering, for both consumption and capacity, can also be developed and supervision can be executed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, Echelon LonWorks. Compatibility with the remote keyboard managing up to 10 units. The internal real time clock allows to manage a weekly schedule operating on 4-day profiles with 10 hour belts (available on W3000SE Compact only, optional on W3000 Base controller).

### Refrigerant



### Versions

K	Key efficiency, compact version	CA	Class A of efficiency
LN-K	Low Noise, Key efficiency and compact version	LN-CA	Low Noise, Class A of efficiency

### Configurations

-	Basic function	D	Partial condensing heat recovery function
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### Features

#### REFRIGERANT GAS R410A

The use of R410A allowed to achieve better energy efficiencies with environment full respect (ODP = 0)

#### ELECTRONIC EXPANSION VALVE

The use of the electronic expansion valve generates considerable benefits, especially in cases of variable demand and different external conditions. It has been introduced into these units as a result of accurate design choices concerning the cooling circuit and the optimisation of operation in various different working conditions. The electronic expansion valve comes standard in the high-efficiency CA version.

#### CLASS A EFFICIENCY

The full range is also available with the Class A efficiency rating (in heating). CA version guarantees within all the noise configurations premium levels of efficiency thanks to the generous sizing of the refrigerant-exchange surface areas and to an accurate control of the fans.

#### WIDE OPERATING RANGE

Unit's operation guaranteed with external air temperature down to -10 °C during winter and up to 46 °C during summer.

#### COMPLIANCE WITH THE STRICTEST EUROPEAN STANDARDS

The main new feature that distinguishes the new NX-N-Y units regards the calculation methods used to define the energy efficiency values.

These values are in fact now calculated not only based on the capacity delivered and power consumed by the unit, but also taking into account heat exchanger pressure drop, or the available pressure head if the unit is installed with pumps, as required by European standard EN14511.

In this way, energy efficiency is no longer an index for evaluating the unit alone, but rather extends the assessment by considering the unit within the system, consequently taking into account the energy required to pump the refrigerant or heat carrier fluid used in the system.

#### TWO SOUND EMISSION LEVELS

Two different sound emission levels available. This means the best unit can be identified based on requirements, according to the system where it will be installed and the application.

#### INTEGRATED HYDRONIC GROUP

The optional built-in hydronic module already contains the main water circuit components; it is available with single or twin in-line, for achieving both low or high head.

### Accessories

- Soft starters
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Remote control keyboard (distance to 200m and to 500m)

NX-N-Y /K		0152P	0182P	0202P	0252P	0262P	0302P	0352P	
Power supply	V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	
<b>PERFORMANCE</b>									
<b>COOLING ONLY (GROSS VALUE)</b>									
Cooling capacity	(1)	kW	38,74	43,77	51,01	58,34	64,63	74,11	84,40
Total power input	(1)	kW	13,72	15,79	18,40	20,55	23,26	28,18	32,15
EER	(1)	kW/kW	2,825	2,772	2,772	2,844	2,773	2,628	2,629
ESEER	(1)	kW/kW	4,010	4,030	4,180	3,940	3,960	3,890	4,030
<b>COOLING ONLY (EN14511 VALUE)</b>									
Cooling capacity	(1)(2)	kW	38,50	43,50	50,70	58,00	64,30	73,80	83,90
EER	(1)(2)	kW/kW	2,770	2,710	2,710	2,790	2,720	2,590	2,570
ESEER	(1)(2)	kW/kW	3,830	3,850	4,000	3,780	3,820	3,770	3,840
Cooling energy class			C	C	C	C	C	D	D
<b>HEATING ONLY (GROSS VALUE)</b>									
Total heating capacity	(3)	kW	42,92	47,38	55,34	65,03	70,69	80,07	92,14
Total power input	(3)	kW	14,03	15,46	18,04	21,30	22,78	25,97	29,56
COP	(3)	kW/kW	3,064	3,058	3,072	3,052	3,101	3,081	3,111
<b>HEATING ONLY (EN14511 VALUE)</b>									
Total heating capacity	(2)(3)	kW	43,20	47,70	55,60	65,40	71,10	80,50	92,70
COP	(2)(3)	kW/kW	3,020	3,020	3,030	3,010	3,060	3,050	3,070
Cooling energy class			B	B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>									
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>									
<b>Process refrigeration at high temperature</b>									
Prated,c	(4)	kW	-	-	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>									
<b>Process refrigeration at medium temperature</b>									
Prated,c	(5)	kW	-	-	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>									
PDesign	(7)	kW	31,0	34,3	42,1	47,9	51,8	59,1	72,2
SCOP	(7)(8)		3,42	3,42	3,55	3,40	3,44	3,42	3,55
Performance $\eta_s$	(7)(9)	%	134	134	139	133	135	134	139
Seasonal efficiency class	(7)		A+	A+	A+	A+	A+	A+	-
<b>EXCHANGERS</b>									
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>									
Water flow	(1)	l/s	1,853	2,093	2,440	2,790	3,091	3,544	4,036
Pressure drop	(1)	kPa	35,4	33,3	35,0	32,8	32,8	30,9	49,2
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>									
Water flow	(3)	l/s	2,072	2,287	2,671	3,139	3,412	3,865	4,448
Pressure drop	(3)	kPa	44,2	39,8	42,0	41,5	40,0	36,8	59,7
<b>REFRIGERANT CIRCUIT</b>									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	12,0	13,3	15,6	17,1	17,2	18,1	26,0
<b>NOISE LEVEL</b>									
Sound Pressure	(10)	dB(A)	67	67	67	67	67	67	68
Sound power level in cooling	(11)(12)	dB(A)	84	84	84	85	85	85	86
Sound power level in heating	(11)(13)	dB(A)	84	84	84	85	85	85	86
<b>SIZE AND WEIGHT</b>									
Operating weight	(14)	kg	510	550	570	640	650	660	790
A	(14)	mm	1825	1825	1825	2395	2395	2395	2395
B	(14)	mm	1195	1195	1195	1195	1195	1195	1195
H	(14)	mm	1865	1865	1865	1865	1865	1865	1865

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.

Certified data in EUROVENT



NX-N-Y /K		0402P	0452P	0502P	0552P	0602P	0702P	0802P
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
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	(1) kW	100,2	112,5	125,0	138,2	161,9	179,7	198,8
Total power input	(1) kW	35,65	40,65	45,16	52,25	58,23	67,64	77,66
EER	(1) kW/kW	2,807	2,764	2,765	2,642	2,782	2,658	2,559
ESEER	(1) kW/kW	3,730	3,820	3,870	3,870	3,780	3,800	3,690
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	99,60	111,9	124,4	137,5	161,1	178,9	197,8
EER	(1)(2) kW/kW	2,740	2,710	2,720	2,590	2,730	2,620	2,510
ESEER	(1)(2) kW/kW	3,580	3,670	3,740	3,720	3,650	3,670	3,560
Cooling energy class		C	C	C	D	C	D	D
<b>HEATING ONLY (GROSS VALUE)</b>								
Total heating capacity	(3) kW	108,3	119,5	133,9	150,1	174,6	193,2	211,4
Total power input	(3) kW	35,52	39,23	42,92	48,57	57,01	63,19	69,48
COP	(3) kW/kW	3,051	3,048	3,121	3,088	3,063	3,057	3,042
<b>HEATING ONLY (EN14511 VALUE)</b>								
Total heating capacity	(2)(3) kW	109,0	120,2	134,7	150,9	175,5	194,1	212,6
COP	(2)(3) kW/kW	3,010	3,010	3,080	3,050	3,030	3,030	3,010
Cooling energy class		B	B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>								
<b>Process refrigeration at high temperature</b>								
Prated,c	(4) kW	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>								
<b>Process refrigeration at medium temperature</b>								
Prated,c	(5) kW	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>								
PDesign	(7) kW	80,1	92,5	103	119	133	157	183
SCOP	(7)(8)	3,22	3,23	3,26	3,36	3,24	3,28	3,22
Performance $\eta_s$	(7)(9) %	126	126	127	131	126	128	126
Seasonal efficiency class	(7)	-	-	-	-	-	-	-
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	(1) l/s	4,790	5,381	5,977	6,611	7,740	8,594	9,506
Pressure drop	(1) kPa	48,2	49,5	47,2	47,9	47,0	44,8	54,8
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>								
Water flow	(3) l/s	5,226	5,767	6,465	7,244	8,426	9,328	10,20
Pressure drop	(3) kPa	57,3	56,9	55,3	57,5	55,8	52,8	63,2
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	2	2	2	2	2	2	2
No. Circuits	N°	1	1	1	1	1	1	1
Refrigerant charge	kg	30,5	35,1	46,8	47,2	48,9	50,4	52,8
<b>NOISE LEVEL</b>								
Sound Pressure	(10) dB(A)	70	70	70	72	71	71	72
Sound power level in cooling	(11)(12) dB(A)	88	88	88	90	90	90	91
Sound power level in heating	(11)(13) dB(A)	88	88	88	90	90	90	91
<b>SIZE AND WEIGHT</b>								
Operating weight	(14) kg	970	1020	1150	1210	1330	1360	1380
A	(14) mm	2825	2825	3360	3360	3980	3980	3980
B	(14) mm	1195	1195	1195	1195	1195	1195	1195
H	(14) mm	1980	1980	1980	1980	1980	1980	1980

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

NX-N-Y /LN-K		0152P	0182P	0202P	0252P	0262P	0302P	0352P
Power supply	V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	(1) kW	35,79	39,83	46,78	53,44	60,38	69,88	77,90
Total power input	(1) kW	15,18	17,57	19,87	22,43	25,78	29,89	34,94
EER	(1) kW/kW	2,355	2,261	2,352	2,384	2,341	2,338	2,232
ESEER	(1) kW/kW	3,910	3,750	4,070	3,820	3,840	3,850	3,920
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	35,60	39,60	46,60	53,10	60,10	69,60	77,50
EER	(1)(2) kW/kW	2,310	2,220	2,320	2,350	2,300	2,300	2,200
ESEER	(1)(2) kW/kW	3,750	3,620	3,910	3,680	3,710	3,720	3,770
Cooling energy class		E	F	E	E	E	E	F
<b>HEATING ONLY (GROSS VALUE)</b>								
Total heating capacity	(3) kW	42,92	47,38	55,34	65,03	70,69	80,07	92,14
Total power input	(3) kW	14,03	15,46	18,04	21,30	22,78	25,97	29,56
COP	(3) kW/kW	3,064	3,058	3,072	3,052	3,101	3,081	3,111
<b>HEATING ONLY (EN14511 VALUE)</b>								
Total heating capacity	(2)(3) kW	43,20	47,70	55,60	65,40	71,10	80,50	92,70
COP	(2)(3) kW/kW	3,020	3,020	3,030	3,010	3,060	3,050	3,070
Cooling energy class		B	B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>								
<b>Process refrigeration at high temperature</b>								
Prated,c	(4) kW	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>								
<b>Process refrigeration at medium temperature</b>								
Prated,c	(5) kW	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>								
PDesign	(7) kW	31,0	34,3	42,1	47,9	51,8	59,1	72,2
SCOP	(7)(8)	3,42	3,42	3,55	3,40	3,44	3,42	3,55
Performance $\eta_s$	(7)(9) %	134	134	139	133	135	134	139
Seasonal efficiency class	(7)	A+	A+	A+	A+	A+	A+	-
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	(1) l/s	1,712	1,905	2,237	2,556	2,887	3,342	3,725
Pressure drop	(1) kPa	30,2	27,6	29,4	27,5	28,6	27,5	41,9
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>								
Water flow	(3) l/s	2,072	2,287	2,671	3,139	3,412	3,865	4,448
Pressure drop	(3) kPa	44,2	39,8	42,0	41,5	40,0	36,8	59,7
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	2	2	2	2	2	2	2
No. Circuits	N°	1	1	1	1	1	1	1
Refrigerant charge	kg	12,0	13,3	15,6	17,1	17,2	18,1	26,0
<b>NOISE LEVEL</b>								
Sound Pressure	(10) dB(A)	60	60	60	60	61	62	64
Sound power level in cooling	(11)(12) dB(A)	77	77	77	78	79	80	82
Sound power level in heating	(11)(13) dB(A)	78	78	78	79	80	81	83
<b>SIZE AND WEIGHT</b>								
Operating weight	(14) kg	510	560	580	650	660	670	800
A	(14) mm	1825	1825	1825	2395	2395	2395	2395
B	(14) mm	1195	1195	1195	1195	1195	1195	1195
H	(14) mm	1865	1865	1865	1865	1865	1865	1865

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

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NX-N-Y /LN-K		0402P	0452P	0502P	0552P	0602P	0702P	0802P
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
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	(1) kW	94,49	103,6	113,9	131,6	154,3	168,3	179,5
Total power input	(1) kW	36,72	42,46	47,78	54,13	60,50	71,63	83,80
EER	(1) kW/kW	2,575	2,438	2,383	2,433	2,550	2,351	2,142
ESEER	(1) kW/kW	3,890	3,890	3,850	3,990	3,960	3,910	3,620
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	94,00	103,1	113,4	131,0	153,6	167,6	178,7
EER	(1)(2) kW/kW	2,530	2,400	2,350	2,390	2,510	2,320	2,110
ESEER	(1)(2) kW/kW	3,750	3,750	3,730	3,850	3,820	3,780	3,500
Cooling energy class		D	E	E	E	D	E	F
<b>HEATING ONLY (GROSS VALUE)</b>								
Total heating capacity	(3) kW	108,3	119,5	133,9	150,1	174,6	193,2	211,4
Total power input	(3) kW	35,52	39,23	42,92	48,57	57,01	63,19	69,48
COP	(3) kW/kW	3,051	3,048	3,121	3,088	3,063	3,057	3,042
<b>HEATING ONLY (EN14511 VALUE)</b>								
Total heating capacity	(2)(3) kW	109,0	120,2	134,7	150,9	175,5	194,1	212,6
COP	(2)(3) kW/kW	3,010	3,010	3,080	3,050	3,030	3,030	3,010
Cooling energy class		B	B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>								
<b>Process refrigeration at high temperature</b>								
Prated,c	(4) kW	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>								
<b>Process refrigeration at medium temperature</b>								
Prated,c	(5) kW	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>								
PDesign	(7) kW	80,1	92,5	103	119	133	157	183
SCOP	(7)(8)	3,31	3,41	3,46	3,51	3,41	3,48	3,38
Performance ηs	(7)(9) %	130	133	136	137	134	136	132
Seasonal efficiency class	(7)	-	-	-	-	-	-	-
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	(1) l/s	4,519	4,955	5,447	6,294	7,379	8,047	8,586
Pressure drop	(1) kPa	42,9	42,0	39,2	43,4	42,8	39,3	44,7
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>								
Water flow	(3) l/s	5,226	5,767	6,465	7,244	8,426	9,328	10,20
Pressure drop	(3) kPa	57,3	56,9	55,3	57,5	55,8	52,8	63,2
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	2	2	2	2	2	2	2
No. Circuits	N°	1	1	1	1	1	1	1
Refrigerant charge	kg	30,5	35,1	46,8	47,2	48,9	50,4	52,8
<b>NOISE LEVEL</b>								
Sound Pressure	(10) dB(A)	65	65	65	66	65	65	67
Sound power level in cooling	(11)(12) dB(A)	83	83	83	84	84	84	86
Sound power level in heating	(11)(13) dB(A)	84	84	84	85	85	85	87
<b>SIZE AND WEIGHT</b>								
Operating weight	(14) kg	1010	1100	1200	1250	1360	1410	1430
A	(14) mm	2825	2825	3360	3360	3980	3980	3980
B	(14) mm	1195	1195	1195	1195	1195	1195	1195
H	(14) mm	1980	1980	1980	1980	1980	1980	1980

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

NX-N-Y /CA		0152P	0182P	0202P	0252P	0262P	0302P	0352P	
Power supply		V/ph/Hz 400/3+N/50 400/3+N/50 400/3+N/50 400/3+N/50 400/3+N/50 400/3/50 400/3/50							
<b>PERFORMANCE</b>									
<b>COOLING ONLY (GROSS VALUE)</b>									
Cooling capacity	(1)	kW	40,00	45,28	51,24	59,61	66,85	80,91	91,97
Total power input	(1)	kW	13,05	14,98	18,03	19,90	22,45	27,02	30,81
EER	(1)	kW/kW	3,077	3,020	2,844	2,995	2,969	2,996	2,987
ESEER	(1)	kW/kW	4,190	4,240	4,220	4,050	4,120	4,010	4,120
<b>COOLING ONLY (EN14511 VALUE)</b>									
Cooling capacity	(1)(2)	kW	39,70	45,00	50,90	59,30	66,50	80,50	91,40
EER	(1)(2)	kW/kW	3,000	2,950	2,780	2,940	2,920	2,940	2,910
ESEER	(1)(2)	kW/kW	3,970	4,030	4,030	3,880	3,960	3,850	3,890
Cooling energy class			B	B	C	B	B	B	B
<b>HEATING ONLY (GROSS VALUE)</b>									
Total heating capacity	(3)	kW	46,11	50,95	59,03	69,51	74,54	86,77	98,61
Total power input	(3)	kW	14,11	15,52	18,10	21,35	22,90	26,67	30,27
COP	(3)	kW/kW	3,270	3,290	3,260	3,263	3,253	3,251	3,254
<b>HEATING ONLY (EN14511 VALUE)</b>									
Total heating capacity	(2)(3)	kW	46,40	51,30	59,40	69,90	74,90	87,30	99,30
COP	(2)(3)	kW/kW	3,210	3,240	3,210	3,220	3,210	3,210	3,200
Cooling energy class			A	A	A	A	A	A	A
<b>ENERGY EFFICIENCY</b>									
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>									
<b>Process refrigeration at high temperature</b>									
Prated,c	(4)	kW	-	-	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>									
<b>Process refrigeration at medium temperature</b>									
Prated,c	(5)	kW	-	-	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>									
PDesign	(7)	kW	33,5	37,2	43,9	51,5	55,6	64,9	73,1
SCOP	(7)(8)		3,77	3,77	3,89	3,76	3,76	3,55	3,56
Performance $\eta_s$	(7)(9)	%	148	148	153	147	147	139	140
Seasonal efficiency class	(7)		A+	A+	A++	A+	A+	A+	-
<b>EXCHANGERS</b>									
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>									
Water flow	(1)	l/s	1,913	2,165	2,450	2,851	3,197	3,869	4,398
Pressure drop	(1)	kPa	37,7	35,7	35,3	34,2	35,1	36,9	58,4
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>									
Water flow	(3)	l/s	2,226	2,459	2,849	3,355	3,598	4,189	4,760
Pressure drop	(3)	kPa	51,0	46,0	47,8	47,4	44,5	43,2	68,4
<b>REFRIGERANT CIRCUIT</b>									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	14,3	15,0	15,0	16,5	16,9	20,0	27,6
<b>NOISE LEVEL</b>									
Sound Pressure	(10)	dB(A)	66	66	66	67	67	70	70
Sound power level in cooling	(11)(12)	dB(A)	84	84	84	85	85	88	88
Sound power level in heating	(11)(13)	dB(A)	84	84	84	85	85	88	88
<b>SIZE AND WEIGHT</b>									
Operating weight	(14)	kg	590	640	640	670	670	800	990
A	(14)	mm	2395	2395	2395	2395	2395	2825	3360
B	(14)	mm	1195	1195	1195	1195	1195	1195	1195
H	(14)	mm	1865	1865	1865	1865	1865	1980	1980

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
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- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

NX-N-Y /CA		0402P	0452P	0502P	0562P	0612P	0712P	0812P
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
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	(1) kW	102,2	116,2	130,9	152,5	169,7	197,7	219,5
Total power input	(1) kW	34,37	39,11	43,52	51,30	56,48	66,46	72,23
EER	(1) kW/kW	2,971	2,972	3,009	2,973	3,004	2,973	3,040
ESEER	(1) kW/kW	4,130	4,170	4,050	4,040	4,050	3,930	3,860
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	101,6	115,5	130,2	151,6	168,8	196,7	218,3
EER	(1)(2) kW/kW	2,900	2,900	2,950	2,900	2,940	2,910	2,970
ESEER	(1)(2) kW/kW	3,940	3,960	3,880	3,840	3,890	3,770	3,700
Cooling energy class		B	B	B	B	B	B	B
<b>HEATING ONLY (GROSS VALUE)</b>								
Total heating capacity	(3) kW	110,4	122,2	138,2	161,4	180,6	209,2	232,2
Total power input	(3) kW	33,87	37,61	42,39	49,67	55,59	64,39	71,18
COP	(3) kW/kW	3,257	3,250	3,259	3,247	3,248	3,248	3,261
<b>HEATING ONLY (EN14511 VALUE)</b>								
Total heating capacity	(2)(3) kW	111,1	123,0	139,0	162,4	181,6	210,3	233,7
COP	(2)(3) kW/kW	3,210	3,200	3,220	3,200	3,210	3,210	3,210
Cooling energy class		A	A	A	A	A	A	A
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>								
<b>Process refrigeration at high temperature</b>								
Prated,c	(4) kW	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>								
<b>Process refrigeration at medium temperature</b>								
Prated,c	(5) kW	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>								
PDesign	(7) kW	81,1	92,2	104	115	134	154	179
SCOP	(7)(8)	3,58	3,65	3,56	3,45	3,55	3,39	3,34
Performance ηs	(7)(9) %	140	143	139	135	139	133	131
Seasonal efficiency class	(7)	-	-	-	-	-	-	-
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	(1) l/s	4,885	5,558	6,260	7,294	8,117	9,453	10,50
Pressure drop	(1) kPa	50,1	52,8	51,8	58,3	51,7	54,2	66,8
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>								
Water flow	(3) l/s	5,328	5,898	6,670	7,791	8,719	10,10	11,21
Pressure drop	(3) kPa	59,6	59,5	58,8	66,5	59,7	61,9	76,2
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	2	2	2	2	2	2	2
No. Circuits	N°	1	1	1	1	1	1	1
Refrigerant charge	kg	31,3	33,6	38,5	46,3	54,1	60,3	70,9
<b>NOISE LEVEL</b>								
Sound Pressure	(10) dB(A)	71	71	71	71	71	72	73
Sound power level in cooling	(11)(12) dB(A)	89	89	90	91	91	92	93
Sound power level in heating	(11)(13) dB(A)	89	89	90	91	91	92	93
<b>SIZE AND WEIGHT</b>								
Operating weight	(14) kg	1120	1170	1290	1790	1890	2150	2260
A	(14) mm	3360	3360	3980	4110	4110	5110	5110
B	(14) mm	1195	1195	1195	2220	2220	2220	2220
H	(14) mm	1980	1980	1980	2150	2150	2150	2150

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
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Certified data in EUROVENT

NX-N-Y /LN-CA		0152P	0182P	0202P	0252P	0262P	0302P	0352P	
Power supply	V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3/50	400/3/50	
<b>PERFORMANCE</b>									
<b>COOLING ONLY (GROSS VALUE)</b>									
Cooling capacity	(1)	kW	36,27	40,93	47,54	54,33	59,83	79,38	87,12
Total power input	(1)	kW	14,64	16,94	19,49	21,98	25,21	26,81	31,17
EER	(1)	kW/kW	2,486	2,420	2,436	2,468	2,373	2,963	2,792
ESEER	(1)	kW/kW	3,980	3,900	4,140	3,890	3,830	4,120	4,080
<b>COOLING ONLY (EN14511 VALUE)</b>									
Cooling capacity	(1)(2)	kW	36,10	40,70	47,30	54,00	59,50	79,00	86,60
EER	(1)(2)	kW/kW	2,440	2,380	2,400	2,430	2,330	2,900	2,730
ESEER	(1)(2)	kW/kW	3,810	3,760	3,970	3,750	3,700	3,960	3,880
Cooling energy class			E	E	E	E	E	B	C
<b>HEATING ONLY (GROSS VALUE)</b>									
Total heating capacity	(3)	kW	46,11	50,95	59,03	69,51	74,54	86,77	98,61
Total power input	(3)	kW	14,11	15,52	18,10	21,35	22,90	26,67	30,27
COP	(3)	kW/kW	3,270	3,290	3,260	3,263	3,253	3,251	3,254
<b>HEATING ONLY (EN14511 VALUE)</b>									
Total heating capacity	(2)(3)	kW	46,40	51,30	59,40	69,90	74,90	87,30	99,30
COP	(2)(3)	kW/kW	3,210	3,240	3,210	3,220	3,210	3,210	3,200
Cooling energy class			A	A	A	A	A	A	A
<b>ENERGY EFFICIENCY</b>									
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>									
<b>Process refrigeration at high temperature</b>									
Prated,c	(4)	kW	-	-	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>									
<b>Process refrigeration at medium temperature</b>									
Prated,c	(5)	kW	-	-	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>									
PDesign	(7)	kW	33,5	37,2	43,9	51,5	55,6	64,9	73,1
SCOP	(7)(8)		3,77	3,77	3,89	3,76	3,76	3,55	3,56
Performance $\eta_s$	(7)(9)	%	148	148	153	147	147	139	140
Seasonal efficiency class	(7)		A+	A+	A++	A+	A+	A+	-
<b>EXCHANGERS</b>									
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>									
Water flow	(1)	l/s	1,734	1,957	2,274	2,598	2,861	3,796	4,166
Pressure drop	(1)	kPa	31,0	29,1	30,4	28,4	28,1	35,5	52,4
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>									
Water flow	(3)	l/s	2,226	2,459	2,849	3,355	3,598	4,189	4,760
Pressure drop	(3)	kPa	51,0	46,0	47,8	47,4	44,5	43,2	68,4
<b>REFRIGERANT CIRCUIT</b>									
Compressors nr.		N°	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1
Refrigerant charge		kg	14,3	15,0	15,0	16,5	16,9	20,0	27,6
<b>NOISE LEVEL</b>									
Sound Pressure	(10)	dB(A)	59	59	59	60	61	64	65
Sound power level in cooling	(11)(12)	dB(A)	77	77	77	78	79	82	83
Sound power level in heating	(11)(13)	dB(A)	78	78	78	79	80	83	84
<b>SIZE AND WEIGHT</b>									
Operating weight	(14)	kg	600	640	650	710	720	840	1000
A	(14)	mm	2395	2395	2395	2395	2395	2825	3360
B	(14)	mm	1195	1195	1195	1195	1195	1195	1195
H	(14)	mm	1865	1865	1865	1865	1865	1980	1980

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

NX-N-Y /LN-CA		0402P	0452P	0502P	0562P	0612P	0712P	0812P
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
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	(1) kW	98,99	109,9	124,9	144,3	165,3	188,9	212,4
Total power input	(1) kW	34,53	39,69	43,65	50,06	55,75	63,77	70,06
EER	(1) kW/kW	2,870	2,768	2,858	2,880	2,968	2,961	3,030
ESEER	(1) kW/kW	4,090	4,120	4,040	4,010	4,120	3,950	3,910
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	98,40	109,3	124,3	143,5	164,5	188,0	211,3
EER	(1)(2) kW/kW	2,800	2,710	2,810	2,820	2,910	2,910	2,970
ESEER	(1)(2) kW/kW	3,900	3,930	3,890	3,820	3,970	3,800	3,760
Cooling energy class		C	C	C	C	B	B	B
<b>HEATING ONLY (GROSS VALUE)</b>								
Total heating capacity	(3) kW	110,4	122,2	138,2	161,4	180,6	209,2	232,2
Total power input	(3) kW	33,87	37,61	42,39	49,67	55,59	64,39	71,18
COP	(3) kW/kW	3,257	3,250	3,259	3,247	3,248	3,248	3,261
<b>HEATING ONLY (EN14511 VALUE)</b>								
Total heating capacity	(2)(3) kW	111,1	123,0	139,0	162,4	181,6	210,3	233,7
COP	(2)(3) kW/kW	3,210	3,200	3,220	3,200	3,210	3,210	3,210
Cooling energy class		A	A	A	A	A	A	A
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>								
<b>Process refrigeration at high temperature</b>								
Prated,c	(4) kW	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>								
<b>Process refrigeration at medium temperature</b>								
Prated,c	(5) kW	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>								
PDesign	(7) kW	81,1	92,2	104	115	134	154	179
SCOP	(7)(8)	3,58	3,65	3,56	3,45	3,55	3,39	3,34
Performance ηs	(7)(9) %	140	143	139	135	139	133	131
Seasonal efficiency class	(7)	-	-	-	-	-	-	-
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	(1) l/s	4,734	5,256	5,971	6,900	7,906	9,034	10,16
Pressure drop	(1) kPa	47,0	47,3	47,1	52,1	49,1	49,5	62,6
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>								
Water flow	(3) l/s	5,328	5,898	6,670	7,791	8,719	10,10	11,21
Pressure drop	(3) kPa	59,6	59,5	58,8	66,5	59,7	61,9	76,2
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	2	2	2	2	2	2	2
No. Circuits	N°	1	1	1	1	1	1	1
Refrigerant charge	kg	31,3	33,6	38,5	46,3	54,1	60,3	70,9
<b>NOISE LEVEL</b>								
Sound Pressure	(10) dB(A)	66	66	65	65	65	66	67
Sound power level in cooling	(11)(12) dB(A)	84	84	84	85	85	86	87
Sound power level in heating	(11)(13) dB(A)	85	85	85	86	86	87	88
<b>SIZE AND WEIGHT</b>								
Operating weight	(14) kg	1130	1190	1300	1800	1900	2160	2270
A	(14) mm	3360	3360	3980	4110	4110	5110	5110
B	(14) mm	1195	1195	1195	2220	2220	2220	2220
H	(14) mm	1980	1980	1980	2150	2150	2150	2150

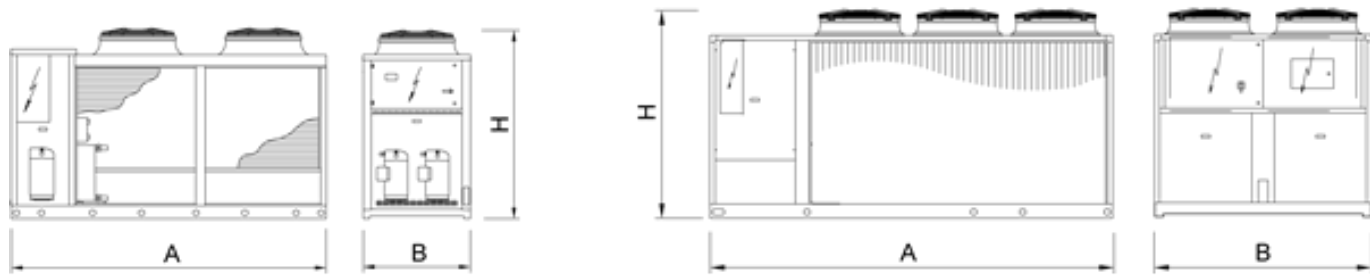
**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.

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**Dimensional drawing**







**Outdoor reversible unit for the production of chilled/hot water with hermetic rotary Scroll compressors, ozone-friendly refrigerant R410A, axial-flow fans, copper tubes aluminum fins air coils, braze-welded plate-type exchanger and thermostatic expansion valve. External panels in pre-clad sheet steel and base in galvanised steel with paint finish. The range is composed by units equipped with four compressors in tandem configuration on two independent refrigerant circuits.**

### Control



#### W3000SE Compact

W3000SE Compact offers advanced functions and algorithms. The keypad features an easy-to-use interface and a LCD display, allowing to consult and intervene on the unit by means of a multi-level menu, with selectable language setting.

Regulation based on the exclusive QuickMind algorithm, including self-adaptive control logics, beneficial in low water content systems. As alternatives the proportional- or proportional-integral regulations are also available.

The diagnostics includes a complete alarm management, with the "black-box" and alarm logging functions for enhanced analysis of the unit operation.

For multiple units' systems, the regulation of the resources, via optional proprietary devices, can be implemented. Energy metering, for both consumption and capacity, can also be developed. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, Echelon LonWorks.

- Compatibility with the remote keyboard managing up to 10 units.

- Internal real time clock available for operation scheduling (4-day profiles with 10 hour belts).

The defrost adopts a proprietary self-adaptive logic, which features the monitoring of numerous operational parameters. This allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.

### Refrigerant



### Versions

K	Key efficiency, compact version	SL-K	Super Low noise, Key efficiency and compact version
LN-K	Low Noise, Key efficiency and compact version		

### Configurations

-	Basic function	D	Partial condensing heat recovery function
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### Features

#### REFRIGERANT GAS R410A

The use of R410A allowed to achieve better energy efficiencies with environment full respect (ODP = 0)

#### INTEGRATED HYDRONIC GROUP

The optional built-in hydronic module already contains the main water circuit components; it is available with single or twin in-line, for achieving both low or high head.

### Accessories

- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Remote control keyboard (distance to 200m and to 500m)
- Soft starters
- Rubber anti-vibration mounting kit. Spring anti-vibration mounting kit (4 compressors models only)

NX-N-Y / K		0604P	0704P	0804P	0904P	1004P	1104P	1204P
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
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	(1) kW	160,1	185,8	211,0	245,2	274,1	298,0	319,3
Total power input	(1) kW	56,89	67,41	75,89	88,76	99,42	106,4	115,9
EER	(1) kW/kW	2,814	2,757	2,780	2,761	2,758	2,801	2,755
ESEER	(1) kW/kW	3,870	4,010	4,070	3,950	3,990	4,050	4,040
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	159,4	185,0	210,1	244,1	272,9	296,9	318,0
EER	(1)(2) kW/kW	2,770	2,710	2,740	2,720	2,710	2,760	2,710
ESEER	(1)(2) kW/kW	3,700	3,830	3,890	3,770	3,810	3,880	3,870
Cooling energy class		C	C	C	C	C	C	C
<b>HEATING ONLY (GROSS VALUE)</b>								
Total heating capacity	(3) kW	173,5	201,7	230,4	271,3	299,5	324,0	344,6
Total power input	(3) kW	56,39	66,40	75,45	89,20	98,31	105,7	112,8
COP	(3) kW/kW	3,076	3,038	3,056	3,041	3,047	3,065	3,055
<b>HEATING ONLY (EN14511 VALUE)</b>								
Total heating capacity	(2)(3) kW	174,4	202,6	231,5	272,7	301,0	325,4	346,3
COP	(2)(3) kW/kW	3,040	3,010	3,030	3,010	3,020	3,040	3,020
Cooling energy class		B	B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>								
<b>Process refrigeration at high temperature</b>								
Prated,c	(4) kW	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>								
<b>Process refrigeration at medium temperature</b>								
Prated,c	(5) kW	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>								
PDesign	(7) kW	127	148	172	200	226	242	260
SCOP	(7)(8)	3,23	3,27	3,27	3,21	3,24	3,26	3,21
Performance ηs	(7)(9) %	126	128	128	125	126	127	125
Seasonal efficiency class	(7)	-	-	-	-	-	-	-
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	(1) l/s	7,655	8,885	10,09	11,73	13,11	14,25	15,27
Pressure drop	(1) kPa	42,5	43,2	44,9	49,2	49,2	43,7	50,1
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>								
Water flow	(3) l/s	8,375	9,738	11,12	13,09	14,45	15,64	16,64
Pressure drop	(3) kPa	50,9	51,9	54,5	61,3	59,8	52,6	59,5
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	4	4	4	4	4	4	4
No. Circuits	N°	2	2	2	2	2	2	2
Refrigerant charge	kg	35,8	55,6	79,1	79,2	82,8	104	104
<b>NOISE LEVEL</b>								
Sound Pressure	(10) dB(A)	73	72	73	74	75	75	75
Sound power level in cooling	(11)(12) dB(A)	92	92	93	94	95	95	95
Sound power level in heating	(11)(13) dB(A)	92	92	93	94	95	95	95
<b>SIZE AND WEIGHT</b>								
Operating weight	(14) kg	1640	1990	2120	2360	2500	2850	2880
A	(14) mm	3110	4110	4110	4110	4110	5110	5110
B	(14) mm	2220	2220	2220	2220	2220	2220	2220
H	(14) mm	2150	2150	2150	2150	2150	2150	2150

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

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NX-N-Y / LN-K		0604P	0704P	0804P	0904P	1004P	1104P	1204P
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
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	(1) kW	152,7	174,4	200,7	234,3	258,2	282,8	303,1
Total power input	(1) kW	56,90	68,54	78,32	90,02	101,4	108,7	119,2
EER	(1) kW/kW	2,684	2,546	2,563	2,603	2,546	2,602	2,543
ESEER	(1) kW/kW	3,960	4,080	4,120	4,080	4,020	4,060	4,050
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	152,0	173,7	199,9	233,4	257,2	281,8	301,9
EER	(1)(2) kW/kW	2,640	2,510	2,530	2,570	2,510	2,570	2,510
ESEER	(1)(2) kW/kW	3,780	3,900	3,950	3,900	3,860	3,910	3,880
Cooling energy class		D	D	D	D	D	D	D
<b>HEATING ONLY (GROSS VALUE)</b>								
Total heating capacity	(3) kW	165,4	192,2	221,4	255,0	283,8	310,1	329,1
Total power input	(3) kW	52,69	62,99	71,89	83,89	92,88	100,4	107,3
COP	(3) kW/kW	3,139	3,051	3,079	3,039	3,055	3,089	3,067
<b>HEATING ONLY (EN14511 VALUE)</b>								
Total heating capacity	(2)(3) kW	166,2	193,1	222,4	256,2	285,1	311,4	330,6
COP	(2)(3) kW/kW	3,110	3,020	3,050	3,010	3,030	3,060	3,040
Cooling energy class		B	B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>								
<b>Process refrigeration at high temperature</b>								
Prated,c	(4) kW	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>								
<b>Process refrigeration at medium temperature</b>								
Prated,c	(5) kW	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>								
PDesign	(7) kW	126	132	170	196	223	239	257
SCOP	(7)(8)	3,34	3,30	3,51	3,37	3,38	3,42	3,43
Performance ηs	(7)(9) %	130	129	137	132	132	134	134
Seasonal efficiency class	(7)	-	-	-	-	-	-	-
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	(1) l/s	7,304	8,339	9,597	11,20	12,35	13,52	14,49
Pressure drop	(1) kPa	38,7	38,0	40,6	44,9	43,7	39,3	45,2
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>								
Water flow	(3) l/s	7,982	9,279	10,69	12,31	13,70	14,97	15,88
Pressure drop	(3) kPa	46,2	47,1	50,3	54,2	53,7	48,2	54,3
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	4	4	4	4	4	4	4
No. Circuits	N°	2	2	2	2	2	2	2
Refrigerant charge	kg	35,8	55,6	79,1	79,2	82,8	104	104
<b>NOISE LEVEL</b>								
Sound Pressure	(10) dB(A)	67	66	67	68	69	70	70
Sound power level in cooling	(11)(12) dB(A)	86	86	87	88	89	90	90
Sound power level in heating	(11)(13) dB(A)	87	87	88	89	90	91	91
<b>SIZE AND WEIGHT</b>								
Operating weight	(14) kg	1690	2040	2170	2410	2550	2900	2930
A	(14) mm	3110	4110	4110	4110	4110	5110	5110
B	(14) mm	2220	2220	2220	2220	2220	2220	2220
H	(14) mm	2150	2150	2150	2150	2150	2150	2150

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

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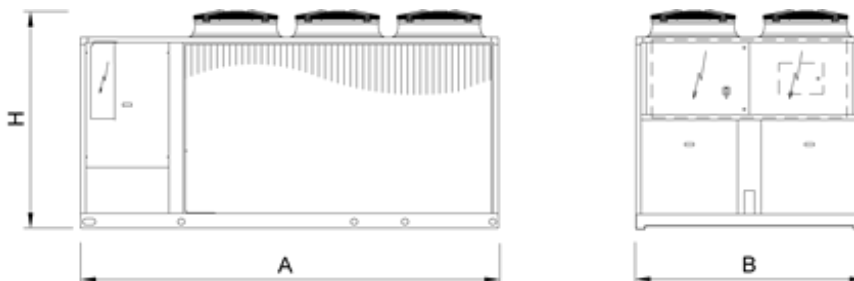
NX-N-Y / SL-K		0604P	0704P	0804P	0904P	1004P	1104P	1204P
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	(1) kW	148,0	175,5	201,7	232,0	255,7	281,1	303,4
Total power input	(1) kW	57,83	68,54	78,93	88,21	100,4	110,5	119,3
EER	(1) kW/kW	2,561	2,562	2,556	2,630	2,547	2,544	2,543
ESEER	(1) kW/kW	4,070	4,070	4,110	4,120	4,120	4,090	4,090
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	147,4	174,8	200,9	231,1	254,7	280,1	302,2
EER	(1)(2) kW/kW	2,520	2,530	2,520	2,590	2,510	2,510	2,510
ESEER	(1)(2) kW/kW	3,900	3,890	3,930	3,930	3,950	3,940	3,920
Cooling energy class		D	D	D	D	D	D	D
<b>HEATING ONLY (GROSS VALUE)</b>								
Total heating capacity	(3) kW	160,2	193,0	223,2	256,8	282,7	307,3	330,1
Total power input	(3) kW	51,18	63,61	72,49	82,20	91,24	100,2	108,2
COP	(3) kW/kW	3,129	3,035	3,079	3,124	3,100	3,067	3,051
<b>HEATING ONLY (EN14511 VALUE)</b>								
Total heating capacity	(2)(3) kW	160,9	193,9	224,2	258,0	284,0	308,5	331,6
COP	(2)(3) kW/kW	3,100	3,010	3,050	3,090	3,070	3,040	3,020
Cooling energy class		B	B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>								
<b>Process refrigeration at high temperature</b>								
Prated,c	(4) kW	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>								
<b>Process refrigeration at medium temperature</b>								
Prated,c	(5) kW	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>								
PDesign	(7) kW	125	135	172	197	219	239	258
SCOP	(7)(8)	3,45	3,24	3,47	3,54	3,46	3,40	3,41
Performance $\eta_s$	(7)(9) %	135	127	136	139	136	133	133
Seasonal efficiency class	(7)	-	-	-	-	-	-	-
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	(1) l/s	7,079	8,392	9,645	11,10	12,23	13,44	14,51
Pressure drop	(1) kPa	36,4	38,5	41,0	44,0	42,8	38,9	45,3
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>								
Water flow	(3) l/s	7,734	9,316	10,78	12,40	13,65	14,83	15,93
Pressure drop	(3) kPa	43,4	47,5	51,2	55,0	53,3	47,3	54,6
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	4	4	4	4	4	4	4
No. Circuits	N°	2	2	2	2	2	2	2
Refrigerant charge	kg	35,8	59,6	79,1	79,2	82,8	104	104
<b>NOISE LEVEL</b>								
Sound Pressure	(10) dB(A)	63	63	63	64	65	66	67
Sound power level in cooling	(11)(12) dB(A)	82	83	83	84	85	86	87
Sound power level in heating	(11)(13) dB(A)	83	84	84	85	86	87	88
<b>SIZE AND WEIGHT</b>								
Operating weight	(14) kg	1690	2130	2260	2690	2830	3020	3040
A	(14) mm	3110	4110	4110	5110	5110	5110	5110
B	(14) mm	2220	2220	2220	2220	2220	2220	2220
H	(14) mm	2150	2150	2150	2150	2150	2150	2150

### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.  
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### Dimensional drawing





**Outdoor reversible heat pump for the production of chilled/hot water with hermetic rotary Scroll compressors, axial-flow fans, shell and tubes heat exchanger and thermostatic expansion valve. External panels in Peraluman and structure in aluminium sections. The range is equipped with two compressors on two independent refrigerant circuits.**

#### Control



#### W3000 Base – W3000SE Compact

Two different versions of controllers are available:

**W3000 Base:** complete with keypad, easy-to-use interface and LCD display, menu with up to three languages (Italian and English come standard, a further language can be chosen within French, Spanish, German, Russian and Swedish)

**W3000SE Compact:** complete with keypad, easy-to-use interface and LCD display, multi-language menu, with selectable language setting on site. Internal clock also included. Both W3000 electronic controllers offer advanced functions and algorithms. The keypad features an easy-to-use interface and a complete LCD display, allowing to consult and intervene on the unit by means of a multi-level menu, with selectable language setting. Regulation based on the exclusive QuickMind algorithm, including self-adaptive control logics, beneficial in low water content systems. As alternatives the proportional- or proportional- integral regulations are also available. Complete alarm management, with the "black-box" and alarm logging functions for enhanced analysis of the unit operation (available on W3000SE Compact only).

For multiple units' systems, the regulation of the resources via optional proprietary devices, can be implemented. Energy metering, for both consumption and capacity, can also be developed and supervision can be executed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, Echelon LonWorks. Compatibility with the remote keyboard managing up to 10 units. The internal real time clock allows to manage a weekly schedule operating on 4-day profiles with 10 hour belts (available on W3000SE Compact only, optional on W3000 Base controller).

#### Refrigerant



#### Versions

B Basic LN Low noise

#### Features

##### REFRIGERANT GAS R410A

The use of R410A allowed to achieve better energy efficiencies with environment full respect (ODP = 0)

##### EXCHANGER

The shell and tube exchanger allows to achieve the highest flexibility on the units installation, keeping the efficiency at the maximum level. For this reason, NECS-N-Y represents the best choice for all the process cooling applications.

##### INTEGRATED HYDRONIC GROUP

The built-in hydronic module already contains the main water circuit components; it is available with single or twin in-line, for achieving both low or high head.

##### MAXIMUM RELIABILITY

Unit with two independent refrigerant circuit, designed to ensure maximum efficiency at full load, ensuring uninterrupted operation even in the event of temporary stop of one of the two circuits.

#### Accessories

- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Remote control keyboard (distance to 200m and to 500m)
- Soft starters
- Rubber anti-vibration mounting kit
- Compact keyboard with LCD display and multi-language user interface (referred to the shown picture)

NECS-N-Y / B		0202T	0252T	0302T	0352T	0412T	0452T	0512T	0552T	0612T	
Power supply		V/ph/Hz 400/3+N/50 400/3+N/50 400/3+N/50 400/3+N/50 400/3+N/50 400/3+N/50 400/3+N/50 400/3+N/50 400/3+N/50 400/3+N/50									
<b>PERFORMANCE</b>											
<b>COOLING ONLY (GROSS VALUE)</b>											
Cooling capacity	(1)	kW	50,26	57,51	72,05	82,47	93,87	106,6	120,1	137,6	150,5
Total power input	(1)	kW	18,42	20,40	28,03	32,01	35,96	39,84	43,96	50,37	58,90
EER	(1)	kW/kW	2,734	2,819	2,571	2,578	2,608	2,678	2,730	2,730	2,555
ESEER	(1)	kW/kW	3,520	3,590	3,310	3,300	3,310	3,390	3,450	3,460	3,260
<b>COOLING ONLY (EN14511 VALUE)</b>											
Cooling capacity	(1)(2)	kW	50,20	57,40	71,80	82,30	93,70	106,3	119,8	137,2	150,0
EER	(1)(2)	kW/kW	2,710	2,800	2,550	2,560	2,590	2,650	2,700	2,700	2,530
ESEER	(1)(2)	kW/kW	3,480	3,530	3,250	3,250	3,260	3,330	3,390	3,380	3,180
Cooling energy class			C	C	D	D	D	D	C	C	D
<b>HEATING ONLY (GROSS VALUE)</b>											
Total heating capacity	(3)	kW	55,10	65,16	81,04	93,45	105,4	120,7	135,7	156,5	172,5
Total power input	(3)	kW	18,47	21,23	26,10	29,77	33,91	37,89	42,29	48,36	54,39
COP	(3)	kW/kW	2,978	3,075	3,103	3,138	3,109	3,185	3,208	3,233	3,171
<b>HEATING ONLY (EN14511 VALUE)</b>											
Total heating capacity	(2)(3)	kW	55,20	65,30	81,20	93,80	105,7	121,1	136,1	157,0	173,1
COP	(2)(3)	kW/kW	2,970	3,060	3,090	3,120	3,090	3,160	3,190	3,210	3,150
Cooling energy class			C	B	B	B	B	B	B	A	B
<b>ENERGY EFFICIENCY</b>											
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>											
<b>Process refrigeration at high temperature</b>											
Prated,c	(4)	kW	-	-	-	-	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>											
<b>Process refrigeration at medium temperature</b>											
Prated,c	(5)	kW	-	-	-	-	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>											
PDesign	(7)	kW	42,2	47,8	60,6	71,7	76,5	91,3	97,5	117	132
SCOP	(7)(8)		3,22	3,24	3,22	3,27	3,21	3,30	3,29	3,36	3,31
Performance ηs	(7)(9)	%	126	127	126	128	125	129	129	131	129
Seasonal efficiency class	(7)		A+	A+	A+	-	-	-	-	-	-
<b>EXCHANGERS</b>											
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>											
Water flow	(1)	l/s	2,404	2,750	3,445	3,944	4,489	5,100	5,744	6,580	7,199
Pressure drop	(1)	kPa	5,60	7,29	11,6	15,1	11,9	15,4	14,1	19,6	23,4
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>											
Water flow	(3)	l/s	2,660	3,145	3,912	4,511	5,089	5,824	6,551	7,556	8,329
Pressure drop	(3)	kPa	6,86	9,54	14,9	19,8	15,3	20,0	18,4	25,8	31,4
<b>REFRIGERANT CIRCUIT</b>											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	17,4	20,4	20,5	23,0	23,1	27,5	30,9	35,6	41,2
<b>NOISE LEVEL</b>											
Sound Pressure	(10)	dB(A)	68	68	68	69	69	69	69	69	69
Sound power level in cooling	(11)(12)	dB(A)	85	85	85	86	86	86	87	87	87
Sound power level in heating	(11)(13)	dB(A)	85	85	85	86	86	86	87	87	87
<b>SIZE AND WEIGHT</b>											
Operating weight	(14)	kg	645	670	710	800	985	1030	1175	1220	1265
A	(14)	mm	2195	2195	2195	2195	2745	2745	3245	3245	3245
B	(14)	mm	1120	1120	1120	1120	1120	1120	1120	1120	1120
H	(14)	mm	1465	1465	1465	1465	1465	1465	1665	1665	1665

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.

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NECS-N-Y / LN			0202T	0252T	0302T	0352T	0412T	0452T	0512T	0552T	0612T
Power supply			V/ph/Hz 400/3+N/50 400/3+N/50 400/3+N/50 400/3+N/50 400/3+N/50 400/3+N/50 400/3+N/50 400/3+N/50 400/3+N/50 400/3+N/50								
<b>PERFORMANCE</b>											
<b>COOLING ONLY (GROSS VALUE)</b>											
Cooling capacity	(1)	kW	48,00	54,63	73,17	83,52	93,89	103,2	118,9	131,7	143,1
Total power input	(1)	kW	19,05	21,35	27,18	31,94	35,95	41,59	44,56	53,33	62,75
EER	(1)	kW/kW	2,526	2,563	2,691	2,618	2,608	2,481	2,666	2,471	2,282
ESEER	(1)	kW/kW	3,520	3,310	3,460	3,330	3,330	3,170	3,380	3,160	2,930
<b>COOLING ONLY (EN14511 VALUE)</b>											
Cooling capacity	(1)(2)	kW	47,90	54,50	73,00	83,30	93,70	102,9	118,6	131,4	142,7
EER	(1)(2)	kW/kW	2,510	2,550	2,660	2,600	2,590	2,460	2,640	2,450	2,260
ESEER	(1)(2)	kW/kW	3,260	3,260	3,390	3,270	3,270	3,110	3,320	3,110	2,880
Cooling energy class			D	D	D	D	D	E	D	E	F
<b>HEATING ONLY (GROSS VALUE)</b>											
Total heating capacity	(3)	kW	54,05	63,60	84,07	96,18	108,9	120,6	137,5	153,9	169,4
Total power input	(3)	kW	18,07	20,63	26,05	30,42	34,10	37,89	42,38	48,27	54,25
COP	(3)	kW/kW	2,989	3,087	3,222	3,164	3,194	3,182	3,243	3,186	3,120
<b>HEATING ONLY (EN14511 VALUE)</b>											
Total heating capacity	(2)(3)	kW	54,20	63,70	84,30	96,50	109,2	121,0	137,9	154,4	170,0
COP	(2)(3)	kW/kW	2,980	3,070	3,200	3,140	3,170	3,160	3,220	3,160	3,100
Cooling energy class			C	B	A	B	B	B	A	B	B
<b>ENERGY EFFICIENCY</b>											
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>											
<b>Process refrigeration at high temperature</b>											
Prated,c	(4)	kW	-	-	-	-	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>											
<b>Process refrigeration at medium temperature</b>											
Prated,c	(5)	kW	-	-	-	-	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>											
PDesign	(7)	kW	38,3	45,3	59,2	66,7	79,5	90,6	103	116	130
SCOP	(7)(8)		3,32	3,37	3,44	3,33	3,47	3,45	3,51	3,32	3,27
Performance ηs	(7)(9)	%	130	132	135	130	136	135	138	130	128
Seasonal efficiency class	(7)		A+	A+	A+	A+	-	-	-	-	-
<b>EXCHANGERS</b>											
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>											
Water flow	(1)	l/s	2,295	2,613	3,499	3,994	4,490	4,937	5,686	6,298	6,842
Pressure drop	(1)	kPa	5,11	6,58	11,9	15,5	11,9	14,4	13,8	17,9	21,2
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>											
Water flow	(3)	l/s	2,609	3,070	4,058	4,643	5,257	5,824	6,636	7,429	8,176
Pressure drop	(3)	kPa	6,60	9,09	16,1	20,9	16,4	20,0	18,8	25,0	30,2
<b>REFRIGERANT CIRCUIT</b>											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	17,4	20,4	20,5	29,9	33,9	27,5	41,2	41,2	41,2
<b>NOISE LEVEL</b>											
Sound Pressure	(10)	dB(A)	63	63	64	65	65	65	66	66	66
Sound power level in cooling	(11)(12)	dB(A)	80	80	81	83	83	83	84	84	84
Sound power level in heating	(11)(13)	dB(A)	81	81	82	84	84	84	85	85	85
<b>SIZE AND WEIGHT</b>											
Operating weight	(14)	kg	645	670	795	935	1060	1065	1230	1220	1265
A	(14)	mm	2195	2195	2745	2745	2745	2745	3245	3245	3245
B	(14)	mm	1120	1120	1120	1120	1120	1120	1120	1120	1120
H	(14)	mm	1465	1465	1465	1665	1665	1665	1665	1665	1665

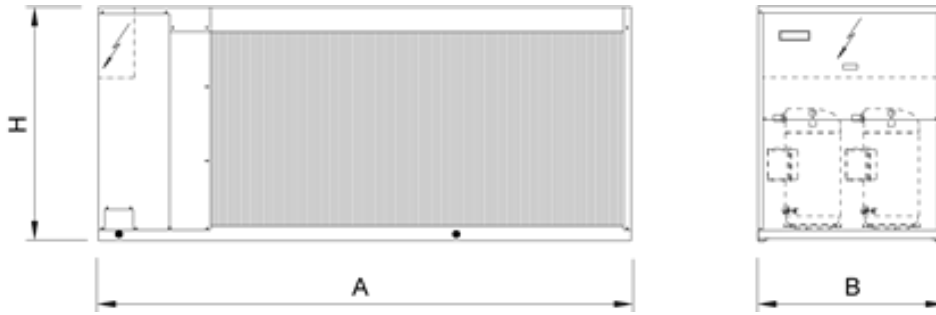
**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

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**Dimensional drawing**







Outdoor reversible unit for the production of chilled/hot water with hermetic rotary Scroll compressors, ozone-friendly refrigerant R410A, axial-flow fans, copper tubes aluminum fins air coils, shell and tubes heat exchanger, and thermostatic or electronic expansion valve, according to the model. External panels in pre-clad sheet steel and base in galvanised steel with paint finish. The range is composed by units equipped with four compressors in tandem configuration on two independent refrigerant circuits.

### Control



#### W3000SE Compact

W3000SE Compact offers advanced functions and algorithms. The keypad features an easy-to-use interface and a LCD display, allowing to consult and intervene on the unit by means of a multi-level menu, with selectable language setting. Regulation based on the exclusive QuickMind algorithm, including self-adaptive control logics, beneficial in low water content systems. As alternatives the proportional- or proportional-integral regulations are also available.

The diagnostics includes a complete alarm management, with the "black-box" and alarm logging functions for enhanced analysis of the unit operation.

For multiple units' systems, the regulation of the resources, via optional proprietary devices, can be implemented. Energy metering, for both consumption and capacity, can also be developed. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, Echelon LonWorks.

- Compatibility with the remote keyboard managing up to 10 units.

- Internal real time clock available for operation scheduling (4-day profiles with 10 hour belts).

The defrost adopts a proprietary self-adaptive logic, which features the monitoring of numerous operational parameters. This allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.

### Refrigerant



### Versions

K	Key efficiency, compact version	CA	Class A of efficiency
LN-K	Low Noise, Key efficiency and compact version	LN-CA	Low Noise, Class A of efficiency
SL-K	Super Low noise, Key efficiency and compact version	SL-CA	Super Low noise version, Class A of efficiency

### Configurations

-	Basic function	D	Partial condensing heat recovery function
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### Features

#### REFRIGERANT GAS R410A

The use of R410A allowed to achieve better energy efficiencies with environment full respect (ODP = 0)

#### ELECTRONIC EXPANSION VALVE SUPPLIED STANDARD

The use of the electronic expansion valve generates considerable benefits, especially in cases of variable demand and different external conditions. It has been introduced into these units as a result of accurate design choices concerning the cooling circuit and the optimisation of operation in various different working conditions. The electronic expansion valve comes standard in the high-efficiency CA version, optional for the compact K versions.

#### CLASS A EFFICIENCY

The full range is also available with the Class A efficiency rating (in heating). CA version guarantees within all the noise configurations premium levels of efficiency thanks to the generous sizing of the refrigerant-exchange surface areas and to an accurate control of the fans.

#### EXCHANGER

The shell and tube exchanger allows to achieve the highest flexibility on the unit's installation, keeping at the minimum level the pressure drops on the hydronic side, thus representing the best choice for all the hydronic applications on the process market.

#### INTEGRATED HYDRONIC GROUP

The optional built-in hydronic module already contains the main water circuit components; it is available with single or twin in-line, for achieving both low or high head.

### Accessories

- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Remote control keyboard (distance to 200m and to 500m)
- Soft starters
- Electronic expansion valve

NX-N-Y / K		0604T	0704T	0804T	0904T	1004T	1104T	1204T
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
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	(1) kW	160,1	185,8	211,0	245,2	274,1	298,0	319,3
Total power input	(1) kW	56,89	67,41	75,89	88,76	99,42	106,4	115,9
EER	(1) kW/kW	2,814	2,757	2,780	2,761	2,758	2,801	2,755
ESEER	(1) kW/kW	3,870	4,010	4,070	3,950	3,990	4,050	4,040
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	159,6	185,2	210,1	244,2	272,8	297,0	318,2
EER	(1)(2) kW/kW	2,780	2,720	2,740	2,720	2,710	2,770	2,720
ESEER	(1)(2) kW/kW	3,770	3,860	3,870	3,780	3,800	3,910	3,890
Cooling energy class		C	C	C	C	C	C	C
<b>HEATING ONLY (GROSS VALUE)</b>								
Total heating capacity	(3) kW	173,5	201,7	230,4	271,3	299,5	324,0	344,6
Total power input	(3) kW	56,39	66,40	75,45	89,20	98,31	105,7	112,8
COP	(3) kW/kW	3,076	3,038	3,056	3,041	3,047	3,065	3,055
<b>HEATING ONLY (EN14511 VALUE)</b>								
Total heating capacity	(2)(3) kW	174,0	202,4	231,6	272,6	301,1	325,2	346,0
COP	(2)(3) kW/kW	3,060	3,010	3,020	3,010	3,010	3,040	3,030
Cooling energy class		B	B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>								
<b>Process refrigeration at high temperature</b>								
Prated,c	(4) kW	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>								
<b>Process refrigeration at medium temperature</b>								
Prated,c	(5) kW	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>								
PDesign	(7) kW	127	148	172	200	226	241	260
SCOP	(7)(8)	3,27	3,29	3,26	3,21	3,22	3,27	3,22
Performance ηs	(7)(9) %	128	129	127	125	126	128	126
Seasonal efficiency class	(7)	-	-	-	-	-	-	-
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	(1) l/s	7,655	8,885	10,09	11,73	13,11	14,25	15,27
Pressure drop	(1) kPa	22,0	29,7	47,8	44,4	55,5	35,5	40,8
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>								
Water flow	(3) l/s	8,375	9,738	11,12	13,09	14,45	15,64	16,64
Pressure drop	(3) kPa	26,4	35,6	58,0	55,3	67,4	42,8	48,4
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	4	4	4	4	4	4	4
No. Circuits	N°	2	2	2	2	2	2	2
Refrigerant charge	kg	36,0	56,2	77,2	77,3	77,4	99,1	99,2
<b>NOISE LEVEL</b>								
Sound Pressure	(10) dB(A)	73	72	73	74	75	75	75
Sound power level in cooling	(11)(12) dB(A)	92	92	93	94	95	95	95
Sound power level in heating	(11)(13) dB(A)	92	92	93	94	95	95	95
<b>SIZE AND WEIGHT</b>								
Operating weight	(14) kg	1810	2180	2340	2560	2650	3150	3190
A	(14) mm	3110	4110	4110	4110	4110	5110	5110
B	(14) mm	2220	2220	2220	2220	2220	2220	2220
H	(14) mm	2150	2150	2150	2150	2150	2150	2150

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

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NX-N-Y / LN-K		0604T	0704T	0804T	0904T	1004T	1104T	1204T
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
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	(1) kW	152,7	174,4	200,7	234,3	258,2	282,8	303,1
Total power input	(1) kW	56,90	68,54	78,32	90,02	101,4	108,7	119,2
EER	(1) kW/kW	2,684	2,546	2,563	2,603	2,546	2,602	2,543
ESEER	(1) kW/kW	3,960	4,080	4,120	4,080	4,020	4,060	4,050
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	152,3	173,9	199,9	233,4	257,1	281,9	302,1
EER	(1)(2) kW/kW	2,660	2,520	2,530	2,570	2,510	2,570	2,510
ESEER	(1)(2) kW/kW	3,850	3,940	3,940	3,910	3,840	3,930	3,910
Cooling energy class		D	D	D	D	D	D	D
<b>HEATING ONLY (GROSS VALUE)</b>								
Total heating capacity	(3) kW	165,4	192,2	221,4	255,0	283,8	310,1	329,1
Total power input	(3) kW	52,69	62,99	71,89	83,89	92,88	100,4	107,3
COP	(3) kW/kW	3,139	3,051	3,079	3,039	3,055	3,089	3,067
<b>HEATING ONLY (EN14511 VALUE)</b>								
Total heating capacity	(2)(3) kW	165,9	192,9	222,5	256,1	285,2	311,2	330,3
COP	(2)(3) kW/kW	3,120	3,030	3,050	3,010	3,020	3,070	3,040
Cooling energy class		B	B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>								
<b>Process refrigeration at high temperature</b>								
Prated,c	(4) kW	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>								
<b>Process refrigeration at medium temperature</b>								
Prated,c	(5) kW	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>								
PDesign	(7) kW	126	132	170	196	223	239	257
SCOP	(7)(8)	3,38	3,33	3,50	3,39	3,36	3,43	3,45
Performance ηs	(7)(9) %	132	130	137	132	131	134	135
Seasonal efficiency class	(7)	-	-	-	-	-	-	-
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	(1) l/s	7,304	8,339	9,597	11,20	12,35	13,52	14,49
Pressure drop	(1) kPa	20,1	26,1	43,2	40,5	49,2	32,0	36,8
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>								
Water flow	(3) l/s	7,982	9,279	10,69	12,31	13,70	14,97	15,88
Pressure drop	(3) kPa	23,9	32,4	53,6	48,9	60,5	39,2	44,1
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	4	4	4	4	4	4	4
No. Circuits	N°	2	2	2	2	2	2	2
Refrigerant charge	kg	36,0	56,2	77,2	77,3	77,4	99,1	99,2
<b>NOISE LEVEL</b>								
Sound Pressure	(10) dB(A)	67	66	67	68	69	70	70
Sound power level in cooling	(11)(12) dB(A)	86	86	87	88	89	90	90
Sound power level in heating	(11)(13) dB(A)	87	87	88	89	90	91	91
<b>SIZE AND WEIGHT</b>								
Operating weight	(14) kg	1860	2230	2390	2610	2700	3200	3240
A	(14) mm	3110	4110	4110	4110	4110	5110	5110
B	(14) mm	2220	2220	2220	2220	2220	2220	2220
H	(14) mm	2150	2150	2150	2150	2150	2150	2150

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.

Certified data in EUROVENT

NX-N-Y / SL-K		0604T	0704T	0804T	0904T	1004T	1104T	1204T
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
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	(1) kW	148,0	175,5	201,7	232,0	255,7	281,1	303,4
Total power input	(1) kW	57,83	68,54	78,93	88,21	100,4	110,5	119,3
EER	(1) kW/kW	2,561	2,562	2,556	2,630	2,547	2,544	2,543
ESEER	(1) kW/kW	4,070	4,070	4,110	4,120	4,120	4,090	4,090
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	147,6	174,9	200,8	231,1	254,6	280,2	302,4
EER	(1)(2) kW/kW	2,540	2,530	2,520	2,590	2,510	2,520	2,510
ESEER	(1)(2) kW/kW	3,960	3,940	3,930	3,950	3,940	3,960	3,940
Cooling energy class		D	D	D	D	D	D	D
<b>HEATING ONLY (GROSS VALUE)</b>								
Total heating capacity	(3) kW	160,2	193,0	223,2	256,8	282,7	307,3	330,1
Total power input	(3) kW	51,18	63,61	72,49	82,20	91,24	100,2	108,2
COP	(3) kW/kW	3,129	3,035	3,079	3,124	3,100	3,067	3,051
<b>HEATING ONLY (EN14511 VALUE)</b>								
Total heating capacity	(2)(3) kW	160,7	193,7	224,3	257,9	284,1	308,4	331,4
COP	(2)(3) kW/kW	3,110	3,010	3,050	3,100	3,070	3,040	3,030
Cooling energy class		B	B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>								
<b>Process refrigeration at high temperature</b>								
Prated,c	(4) kW	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>								
<b>Process refrigeration at medium temperature</b>								
Prated,c	(5) kW	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>								
PDesign	(7) kW	124	134	172	196	220	238	257
SCOP	(7)(8)	3,49	3,28	3,46	3,55	3,44	3,41	3,43
Performance $\eta_s$	(7)(9) %	136	128	135	139	135	134	134
Seasonal efficiency class	(7)	-	-	-	-	-	-	-
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	(1) l/s	7,079	8,392	9,645	11,10	12,23	13,44	14,51
Pressure drop	(1) kPa	18,8	26,5	43,6	39,7	48,2	31,6	36,8
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>								
Water flow	(3) l/s	7,734	9,316	10,78	12,40	13,65	14,83	15,93
Pressure drop	(3) kPa	22,5	32,6	54,5	49,6	60,1	38,5	44,4
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	4	4	4	4	4	4	4
No. Circuits	N°	2	2	2	2	2	2	2
Refrigerant charge	kg	36,0	56,2	77,2	77,3	77,4	99,1	99,2
<b>NOISE LEVEL</b>								
Sound Pressure	(10) dB(A)	63	63	63	64	65	66	67
Sound power level in cooling	(11)(12) dB(A)	82	83	83	84	85	86	87
Sound power level in heating	(11)(13) dB(A)	83	84	84	85	86	87	88
<b>SIZE AND WEIGHT</b>								
Operating weight	(14) kg	1860	2310	2470	2870	2980	3320	3370
A	(14) mm	3110	4110	4110	5110	5110	5110	5110
B	(14) mm	2220	2220	2220	2220	2220	2220	2220
H	(14) mm	2150	2150	2150	2150	2150	2150	2150

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.

Certified data in EUROVENT

NX-N-Y / CA		0604T	0704T	0804T	0904T	1004T	1104T	1204T	
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	
<b>PERFORMANCE</b>									
<b>COOLING ONLY (GROSS VALUE)</b>									
Cooling capacity	(1)	kW	164,1	190,8	222,4	253,3	283,2	310,1	335,3
Total power input	(1)	kW	55,71	64,57	73,83	85,32	95,97	104,8	113,3
EER	(1)	kW/kW	2,946	2,954	3,014	2,970	2,950	2,959	2,959
ESEER	(1)	kW/kW	4,130	4,250	4,220	4,250	4,220	4,160	4,180
<b>COOLING ONLY (EN14511 VALUE)</b>									
Cooling capacity	(1)(2)	kW	163,6	190,1	221,4	252,2	282,3	309,1	334,0
EER	(1)(2)	kW/kW	2,910	2,910	2,960	2,920	2,910	2,920	2,910
ESEER	(1)(2)	kW/kW	4,000	4,080	4,010	4,050	4,080	4,010	4,010
Cooling energy class			B	B	B	B	B	B	B
<b>HEATING ONLY (GROSS VALUE)</b>									
Total heating capacity	(3)	kW	171,5	199,0	237,6	265,8	292,9	329,0	349,7
Total power input	(3)	kW	52,96	61,51	73,10	81,95	90,60	101,5	108,0
COP	(3)	kW/kW	3,236	3,236	3,250	3,241	3,233	3,241	3,238
<b>HEATING ONLY (EN14511 VALUE)</b>									
Total heating capacity	(2)(3)	kW	172,0	199,7	238,9	267,0	293,9	330,2	351,2
COP	(2)(3)	kW/kW	3,210	3,210	3,210	3,210	3,210	3,210	3,210
Cooling energy class			A	A	A	A	A	A	A
<b>ENERGY EFFICIENCY</b>									
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>									
<b>Process refrigeration at high temperature</b>									
Prated,c	(4)	kW	-	-	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>									
<b>Process refrigeration at medium temperature</b>									
Prated,c	(5)	kW	-	-	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>									
PDesign	(7)	kW	120	150	176	199	223	246	264
SCOP	(7)(8)		3,65	3,86	3,76	3,83	3,79	3,71	3,74
Performance ηs	(7)(9)	%	143	151	147	150	149	145	147
Seasonal efficiency class	(7)		-	-	-	-	-	-	-
<b>EXCHANGERS</b>									
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>									
Water flow	(1)	l/s	7,848	9,122	10,63	12,11	13,54	14,83	16,03
Pressure drop	(1)	kPa	23,1	31,3	53,1	47,4	32,1	38,5	45,0
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>									
Water flow	(3)	l/s	8,276	9,607	11,47	12,83	14,14	15,88	16,88
Pressure drop	(3)	kPa	25,7	34,7	61,7	53,1	35,0	44,1	49,9
<b>REFRIGERANT CIRCUIT</b>									
Compressors nr.		N°	4	4	4	4	4	4	4
No. Circuits		N°	2	2	2	2	2	2	2
Refrigerant charge		kg	45,0	69,8	90,4	90,5	90,6	115	115
<b>NOISE LEVEL</b>									
Sound Pressure	(10)	dB(A)	72	72	74	74	75	77	77
Sound power level in cooling	(11)(12)	dB(A)	92	92	94	94	95	97	97
Sound power level in heating	(11)(13)	dB(A)	92	92	94	94	95	97	97
<b>SIZE AND WEIGHT</b>									
Operating weight	(14)	kg	2070	2360	2750	2870	3150	3640	3660
A	(14)	mm	4110	4110	5110	5110	5110	6110	6110
B	(14)	mm	2220	2220	2220	2220	2220	2220	2220
H	(14)	mm	2150	2150	2150	2150	2150	2150	2150

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.

Certified data in EUROVENT

NX-N-Y / LN-CA		0604T	0704T	0804T	0904T	1004T	1104T	1204T
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
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	(1) kW	158,6	187,4	216,0	247,9	276,5	300,4	324,7
Total power input	(1) kW	53,77	62,45	70,77	82,25	93,65	100,7	109,2
EER	(1) kW/kW	2,948	2,998	3,051	3,012	2,951	2,983	2,973
ESEER	(1) kW/kW	4,300	4,310	4,320	4,310	4,280	4,300	4,260
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	158,2	186,8	215,0	246,9	275,7	299,4	323,5
EER	(1)(2) kW/kW	2,920	2,960	2,990	2,960	2,920	2,940	2,930
ESEER	(1)(2) kW/kW	4,160	4,150	4,110	4,100	4,140	4,150	4,080
Cooling energy class		B	B	B	B	B	B	B
<b>HEATING ONLY (GROSS VALUE)</b>								
Total heating capacity	(3) kW	170,0	207,4	238,7	274,8	303,9	328,7	358,3
Total power input	(3) kW	51,90	64,10	73,20	84,73	93,91	101,3	110,5
COP	(3) kW/kW	3,276	3,236	3,261	3,244	3,236	3,245	3,243
<b>HEATING ONLY (EN14511 VALUE)</b>								
Total heating capacity	(2)(3) kW	170,5	208,2	240,0	276,1	304,9	329,9	359,8
COP	(2)(3) kW/kW	3,250	3,210	3,220	3,210	3,210	3,220	3,210
Cooling energy class		A	A	A	A	A	A	A
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>								
<b>Process refrigeration at high temperature</b>								
Prated,c	(4) kW	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>								
<b>Process refrigeration at medium temperature</b>								
Prated,c	(5) kW	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>								
PDesign	(7) kW	119	153	177	203	227	245	266
SCOP	(7)(8)	3,85	3,88	3,93	3,91	3,84	3,87	3,84
Performance $\eta_s$	(7)(9) %	151	152	154	153	151	152	150
Seasonal efficiency class	(7)	-	-	-	-	-	-	-
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	(1) l/s	7,585	8,960	10,33	11,85	13,22	14,37	15,53
Pressure drop	(1) kPa	21,6	30,2	50,1	45,3	30,6	36,1	42,2
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>								
Water flow	(3) l/s	8,204	10,01	11,52	13,27	14,67	15,87	17,30
Pressure drop	(3) kPa	25,3	37,7	62,3	56,8	37,6	44,1	52,3
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	4	4	4	4	4	4	4
No. Circuits	N°	2	2	2	2	2	2	2
Refrigerant charge	kg	45,0	69,8	90,4	90,5	90,6	115	115
<b>NOISE LEVEL</b>								
Sound Pressure	(10) dB(A)	66	67	68	69	70	70	71
Sound power level in cooling	(11)(12) dB(A)	86	87	88	89	90	90	91
Sound power level in heating	(11)(13) dB(A)	87	88	89	90	91	91	92
<b>SIZE AND WEIGHT</b>								
Operating weight	(14) kg	2070	2440	2750	2970	3250	3610	3740
A	(14) mm	4110	4110	5110	5110	5110	6110	6110
B	(14) mm	2220	2220	2220	2220	2220	2220	2220
H	(14) mm	2150	2150	2150	2150	2150	2150	2150

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.

Certified data in EUROVENT

0604T - 1204T 148,0-335,3 kW

NX-N-Y / SL-CA		0604T	0704T	0804T	0904T	1004T	1104T	1204T
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
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	(1) kW	157,7	185,5	215,6	244,7	274,8	298,6	324,2
Total power input	(1) kW	53,51	62,89	71,03	82,67	92,84	100,9	109,7
EER	(1) kW/kW	2,948	2,949	3,037	2,959	2,961	2,959	2,955
ESEER	(1) kW/kW	4,340	4,410	4,380	4,400	4,340	4,320	4,280
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	157,3	184,9	214,6	243,7	274,0	297,6	323,0
EER	(1)(2) kW/kW	2,920	2,910	2,980	2,910	2,930	2,920	2,910
ESEER	(1)(2) kW/kW	4,190	4,230	4,150	4,190	4,200	4,170	4,110
Cooling energy class		B	B	B	B	B	B	B
<b>HEATING ONLY (GROSS VALUE)</b>								
Total heating capacity	(3) kW	169,3	202,8	237,7	268,3	299,5	325,1	355,9
Total power input	(3) kW	51,20	62,61	73,20	82,71	92,12	100,6	109,6
COP	(3) kW/kW	3,307	3,240	3,247	3,244	3,252	3,232	3,247
<b>HEATING ONLY (EN14511 VALUE)</b>								
Total heating capacity	(2)(3) kW	169,8	203,6	239,0	269,5	300,5	326,3	357,4
COP	(2)(3) kW/kW	3,280	3,210	3,210	3,210	3,230	3,210	3,220
Cooling energy class		A	A	A	A	A	A	A
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>								
<b>Process refrigeration at high temperature</b>								
Prated,c	(4) kW	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>								
<b>Process refrigeration at medium temperature</b>								
Prated,c	(5) kW	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>								
PDesign	(7) kW	117	152	176	201	224	243	266
SCOP	(7)(8)	3,75	3,91	3,85	3,94	3,86	3,87	3,85
Performance ηs	(7)(9)	% 147	153	151	155	151	152	151
Seasonal efficiency class	(7)	-	-	-	-	-	-	-
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	(1) l/s	7,541	8,871	10,31	11,70	13,14	14,28	15,50
Pressure drop	(1) kPa	21,4	29,6	49,9	44,2	30,2	35,7	42,0
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>								
Water flow	(3) l/s	8,170	9,791	11,47	12,95	14,46	15,69	17,18
Pressure drop	(3) kPa	25,1	36,0	61,8	54,1	36,6	43,1	51,6
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	4	4	4	4	4	4	4
No. Circuits	N°	2	2	2	2	2	2	2
Refrigerant charge	kg	45,0	69,8	90,4	90,5	106	115	115
<b>NOISE LEVEL</b>								
Sound Pressure	(10) dB(A)	63	63	64	65	66	67	68
Sound power level in cooling	(11)(12) dB(A)	83	83	84	85	86	87	88
Sound power level in heating	(11)(13) dB(A)	84	84	85	86	87	88	89
<b>SIZE AND WEIGHT</b>								
Operating weight	(14) kg	2150	2440	2850	2970	3550	3610	3740
A	(14) mm	4110	4110	5110	5110	6110	6110	6110
B	(14) mm	2220	2220	2220	2220	2220	2220	2220
H	(14) mm	2150	2150	2150	2150	2150	2150	2150

### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.

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Dimensional drawing







**Outdoor heat pump for the production of chilled/hot water with hermetic rotary Scroll compressors, ozone-friendly refrigerant R410A, axial-flow fans, shell and tubes exchanger and electronic expansion valve. The range is composed by units equipped with four, six and eight compressors in multi-circuit configuration.**

### Control



#### W3000SE Compact

W3000SE Compact offers advanced functions and algorithms. The keypad features an easy-to-use interface and a LCD display, allowing to consult and intervene on the unit by means of a multi-level menu, with selectable language setting.

Regulation based on the exclusive QuickMind algorithm, including self-adaptive control logics, beneficial in low water content systems. As alternatives the proportional- or proportional-integral regulations are also available.

The diagnostics includes a complete alarm management, with the "black-box" and alarm logging functions for enhanced analysis of the unit operation.

For multiple units' systems, the regulation of the resources, via optional proprietary devices, can be implemented. Energy metering, for both consumption and capacity, can also be developed. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, Echelon LonWorks.

- Compatibility with the remote keyboard managing up to 10 units.

- Internal real time clock available for operation scheduling (4-day profiles with 10 hour belts).

The defrost adopts a proprietary self-adaptive logic, which features the monitoring of numerous operational parameters. This allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.

### Refrigerant



### Versions

B	Basic	CA	High efficiency version
SL	Super-low noise version		

### Configurations

-	Basic function	D	Partial condensing heat recovery function
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### Features

#### REFRIGERANT GAS R410A

The use of R410A allowed to achieve better energy efficiencies with environment full respect (ODP = 0)

#### EXCHANGER

The shell and tube exchanger allows to achieve the highest flexibility on the unit's installation, keeping on the hydronic side the pressure drops at the minimum level. For this reason, NECS-N-Y represents the best choice for all the hydronic applications on the process market.

#### ELECTRONIC EXPANSION VALVE SUPPLIED STANDARD

The use of the electronic expansion valve generates considerable benefits, especially in cases of variable demand and different external conditions. It was introduced into these units as a result of accurate design choices concerning the cooling circuit and the optimisation of operation in various different working conditions

#### INTEGRATED HYDRONIC GROUP

The optional built-in hydronic module already contains the main water circuit components; it is available with single or twin in-line, for achieving both low or high head.

### Accessories

- Soft starters
- Set-up for remote connectivity with ModBus, Echelon LonTalk, Bacnet protocol board
- Remote control keyboard (distance to 200m and to 500m)
- LT kit for extending the operating limits in heat pump mode down to -10 °C (/SL-CA versions) and -12 °C (/CA versions)

NECS-N-Y / B			1314	1414	1614	1716	1816
Power supply	V/ph/Hz		400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>							
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1)	kW	339,4	363,4	396,4	434,9	477,8
Total power input	(1)	kW	126,4	132,0	151,4	164,6	177,8
EER	(1)	kW/kW	2,685	2,753	2,618	2,642	2,687
ESEER	(1)	kW/kW	3,800	3,880	3,790	3,880	3,780
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2)	kW	338,0	362,1	394,7	433,6	476,2
EER	(1)(2)	kW/kW	2,640	2,720	2,580	2,610	2,650
ESEER	(1)(2)	kW/kW	3,640	3,730	3,640	3,740	3,640
Cooling energy class			D	C	D	D	D
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(3)	kW	371,0	398,0	435,7	472,9	514,6
Total power input	(3)	kW	122,4	129,7	142,7	157,2	170,6
COP	(3)	kW/kW	3,031	3,069	3,053	3,008	3,016
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(2)(3)	kW	372,8	399,7	437,9	474,5	516,6
COP	(2)(3)	kW/kW	3,000	3,040	3,020	2,990	2,990
Cooling energy class			B	B	B	C	C
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Process refrigeration at high temperature</b>							
Prated,c	(4)	kW	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>							
<b>Process refrigeration at medium temperature</b>							
Prated,c	(5)	kW	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(7)	kW	274	311	358	373	387
SCOP	(7)(8)		3,47	3,54	3,44	3,59	3,49
Performance $\eta_s$	(7)(9)	%	136	139	134	141	137
Seasonal efficiency class	(7)		-	-	-	-	-
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	16,23	17,38	18,95	20,80	22,85
Pressure drop	(1)	kPa	49,5	43,4	51,7	35,3	42,6
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(3)	l/s	17,91	19,21	21,03	22,83	24,84
Pressure drop	(3)	kPa	60,3	53,1	63,6	42,5	50,4
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.		N°	4	4	4	6	6
No. Circuits		N°	2	2	2	3	3
Refrigerant charge		kg	72,0	76,0	76,0	93,0	97,0
<b>NOISE LEVEL</b>							
Sound Pressure	(10)	dB(A)	76	76	76	76	76
Sound power level in cooling	(11)(12)	dB(A)	96	96	96	96	97
Sound power level in heating	(11)(13)	dB(A)	96	96	96	96	97
<b>SIZE AND WEIGHT</b>							
Operating weight	(14)	kg	3170	3250	3280	4220	4610
A	(14)	mm	3905	3905	3905	4515	5690
B	(14)	mm	2260	2260	2260	2260	2260
H	(14)	mm	2450	2450	2450	2450	2450

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

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<b>NECS-N-Y / SL</b>		<b>1314</b>	<b>1414</b>	<b>1614</b>	<b>1716</b>	<b>1816</b>	<b>2016</b>	<b>2116</b>
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
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	(1) kW	319,6	343,2	382,8	412,6	444,5	493,1	515,8
Total power input	(1) kW	131,2	138,1	154,5	170,4	185,0	199,5	207,3
EER	(1) kW/kW	2,436	2,485	2,478	2,421	2,403	2,472	2,488
ESEER	(1) kW/kW	3,990	4,000	3,970	4,050	3,990	4,070	4,060
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	318,4	342,1	381,3	411,5	443,1	491,7	514,2
EER	(1)(2) kW/kW	2,400	2,460	2,440	2,400	2,380	2,450	2,460
ESEER	(1)(2) kW/kW	3,830	3,870	3,810	3,920	3,840	3,930	3,910
Cooling energy class		E	E	E	E	E	E	E
<b>HEATING ONLY (GROSS VALUE)</b>								
Total heating capacity	(3) kW	368,3	390,5	441,8	474,3	512,9	564,1	585,9
Total power input	(3) kW	117,3	125,3	139,1	152,3	164,5	179,8	187,5
COP	(3) kW/kW	3,140	3,117	3,176	3,114	3,118	3,137	3,125
<b>HEATING ONLY (EN14511 VALUE)</b>								
Total heating capacity	(2)(3) kW	370,1	392,1	444,0	476,0	514,9	566,1	588,1
COP	(2)(3) kW/kW	3,110	3,090	3,140	3,090	3,090	3,110	3,100
Cooling energy class		B	B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>								
<b>Process refrigeration at high temperature</b>								
Prated,c	(4) kW	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>								
<b>Process refrigeration at medium temperature</b>								
Prated,c	(5) kW	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>								
PDesign	(7) kW	221	254	350	282	390	352	380
SCOP	(7)(8)	3,54	3,58	3,65	3,55	3,77	3,61	3,59
Performance $\eta_s$	(7)(9) %	139	140	143	139	148	141	140
Seasonal efficiency class	(7)	-	-	-	-	-	-	-
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	(1) l/s	15,28	16,41	18,31	19,73	21,26	23,58	24,66
Pressure drop	(1) kPa	43,9	38,7	48,2	31,8	36,9	34,6	37,8
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>								
Water flow	(3) l/s	17,78	18,85	21,33	22,90	24,76	27,23	28,28
Pressure drop	(3) kPa	59,4	51,1	65,4	42,8	50,0	46,1	49,8
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	4	4	4	6	6	6	6
No. Circuits	N°	2	2	2	3	3	3	3
Refrigerant charge	kg	79,9	82,3	94,7	107	118	125	126
<b>NOISE LEVEL</b>								
Sound Pressure	(10) dB(A)	68	68	68	68	68	69	69
Sound power level in cooling	(11)(12) dB(A)	88	88	88	89	89	90	90
Sound power level in heating	(11)(13) dB(A)	89	89	89	90	90	91	91
<b>SIZE AND WEIGHT</b>								
Operating weight	(14) kg	3400	3530	3680	4720	4860	5160	5270
A	(14) mm	4515	5080	5080	5690	5690	6865	7430
B	(14) mm	2260	2260	2260	2260	2260	2260	2260
H	(14) mm	2450	2450	2450	2450	2450	2450	2450

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
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- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

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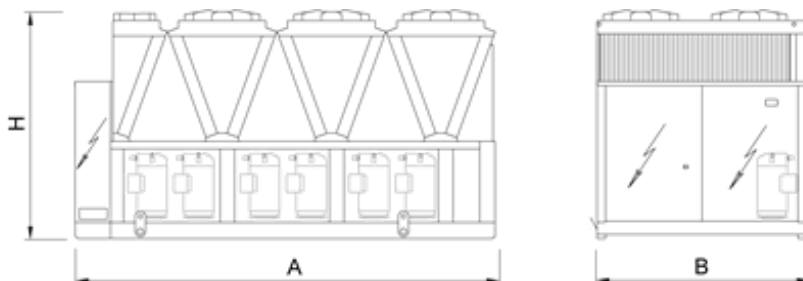
NECS-N-Y / CA			1314	1414	1614	1716	1816
Power supply	V/ph/Hz		400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>							
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1)	kW	351,7	371,8	416,8	453,2	504,4
Total power input	(1)	kW	121,2	127,8	143,4	155,5	172,6
EER	(1)	kW/kW	2,902	2,909	2,907	2,914	2,922
ESEER	(1)	kW/kW	4,120	4,200	4,070	4,190	4,080
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2)	kW	350,2	370,4	414,9	451,8	502,5
EER	(1)(2)	kW/kW	2,850	2,870	2,860	2,880	2,880
ESEER	(1)(2)	kW/kW	3,930	4,020	3,870	4,030	3,900
Cooling energy class			C	C	C	C	C
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(3)	kW	383,2	409,4	449,2	496,7	533,2
Total power input	(3)	kW	119,5	127,8	139,8	154,8	166,2
COP	(3)	kW/kW	3,207	3,203	3,213	3,209	3,208
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(2)(3)	kW	385,1	411,2	451,5	498,6	535,4
COP	(2)(3)	kW/kW	3,170	3,170	3,180	3,180	3,180
Cooling energy class			B	B	B	B	B
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Process refrigeration at high temperature</b>							
Prated,c	(4)	kW	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>							
<b>Process refrigeration at medium temperature</b>							
Prated,c	(5)	kW	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(7)	kW	275	309	353	368	381
SCOP	(7)(8)		3,65	3,73	3,63	3,78	3,68
Performance $\eta_s$	(7)(9)	%	143	146	142	148	144
Seasonal efficiency class	(7)		-	-	-	-	-
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	16,82	17,78	19,93	21,67	24,12
Pressure drop	(1)	kPa	53,2	45,5	57,1	38,4	47,5
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(3)	l/s	18,50	19,76	21,68	23,98	25,74
Pressure drop	(3)	kPa	64,3	56,2	67,6	46,9	54,1
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.		N°	4	4	4	6	6
No. Circuits		N°	2	2	2	3	3
Refrigerant charge		kg	90,0	96,0	96,5	121	125
<b>NOISE LEVEL</b>							
Sound Pressure	(10)	dB(A)	77	77	77	76	77
Sound power level in cooling	(11)(12)	dB(A)	97	97	97	97	98
Sound power level in heating	(11)(13)	dB(A)	97	97	97	97	98
<b>SIZE AND WEIGHT</b>							
Operating weight	(14)	kg	3490	3580	3610	4840	5120
A	(14)	mm	5080	5080	5080	6255	7430
B	(14)	mm	2260	2260	2260	2260	2260
H	(14)	mm	2450	2450	2450	2450	2450

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

#### Dimensional drawing





**Outdoor heat pump unit for the production of chilled/hot water with semi-hermetic screw compressors optimized for R134a, axial-flow fans, external coil with copper tubes and aluminium fins, shell and tubes heat exchanger designed by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. and electronic expansion valve.**

**Base and supporting structure and panels are galvanized epoxy powder coated steel with increased thickness.**

**These units are designed for two-pipes systems and are able to produce hot or cold water according to the selected operation mode; the precise thermoregulation guarantees an optimal response to load's changes, in every operating conditions.**

### Control



#### Electronic control W3000 TE

W3000TE features a large keyboard and wide LCD display for an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements. Complete alarm management system is available, with the "black-box" and the alarm history display functions. For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices. Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks.

Compatibility with remote keyboard (up to 8 units). The programmable timer allows the creation of an operating profile up to 4 typical days and 10 time bands. Continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

### Refrigerant



### Versions

B	Basic	SL-CA	Super Low noise version, Class A of efficiency
CA	Class A of efficiency		
LN-CA	Low Noise, Class A of efficiency		

### Configurations

-	Basic function	D	Partial condensing heat recovery function
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### Features

#### HIGH EFFICIENCY

Unit in Class A as per Eurovent (in heating). High efficiency for low energy consumption during the operating hours.

#### SMART DEFROST

The advanced self-adaptive proprietary defrosting logics take into account all the operating parameters and the external conditions: the number and duration of the defrost cycles are therefore reduced to the minimum necessary ensuring an increase in efficiency and net heating capacity of the units.

#### COMPACTNESS

Reduced dimensions, for easy installation even in sites with space' constraints

#### WIDE OPERATING RANGE

Unit's operation guaranteed with external air temperature down to -10 °C during winter and up to 50 °C during summer.

#### HOT WATER SUPPLY

Supply of hot water in use up to 60°C, offering maximum versatility with respect to different plant engineering solutions

### Accessories

- Hydronic group
- VPF (Variable Primary Flow) kit: variable flow pumps with on board regulation
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Kit HWT, High Water Temperature, to produce hot water up to 60°C
- Soft start

FOCS-N-Y / B		2022	2222	2422	2722	3222	3622	4222	4822
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
<b>PERFORMANCE</b>									
<b>COOLING ONLY (GROSS VALUE)</b>									
Cooling capacity	(1) kW	449,7	494,0	530,9	662,8	790,9	916,2	1029	1146
Total power input	(1) kW	163,0	177,2	186,6	224,6	267,4	292,7	336,8	381,6
EER	(1) kW/kW	2,759	2,788	2,845	2,951	2,958	3,130	3,055	3,003
ESEER	(1) kW/kW	3,710	3,750	3,810	4,180	4,060	4,080	4,200	4,130
<b>COOLING ONLY (EN14511 VALUE)</b>									
Cooling capacity	(1)(2) kW	448,5	492,6	529,3	661,1	788,7	913,9	1026	1143
EER	(1)(2) kW/kW	2,730	2,760	2,810	2,920	2,930	3,100	3,020	2,970
ESEER	(1)(2) kW/kW	3,610	3,640	3,690	4,060	3,940	3,980	4,060	4,010
Cooling energy class		C	C	C	B	B	A	B	B
<b>HEATING ONLY (GROSS VALUE)</b>									
Total heating capacity	(3) kW	478,6	523,7	566,5	698,6	823,9	945,9	1073	1195
Total power input	(3) kW	152,4	166,1	178,0	210,5	247,1	277,0	315,7	355,8
COP	(3) kW/kW	3,140	3,153	3,183	3,319	3,334	3,415	3,399	3,359
<b>HEATING ONLY (EN14511 VALUE)</b>									
Total heating capacity	(2)(3) kW	480,0	525,3	568,5	700,6	826,4	948,5	1077	1199
COP	(2)(3) kW/kW	3,120	3,130	3,160	3,300	3,310	3,390	3,370	3,340
Cooling energy class		B	B	B	A	A	A	A	A
<b>ENERGY EFFICIENCY</b>									
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>									
<b>Process refrigeration at high temperature</b>									
Prated,c	(4) kW	-	-	-	661,1	788,7	913,9	1026	1143
SEPR	(4)(6)	-	-	-	5,10	5,25	5,10	5,12	5,05
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>									
<b>Process refrigeration at medium temperature</b>									
Prated,c	(5) kW	-	-	-	352,7	418,4	-	550,3	614,1
SEPR	(5)(6)	-	-	-	3,23	3,23	-	3,28	3,23
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>									
PDesign	(7) kW	336	362	399	-	-	-	-	-
SCOP	(7)(8)	3,20	3,20	3,20	-	-	-	-	-
Performance ηs	(7)(9) %	125	125	125	-	-	-	-	-
Seasonal efficiency class	(7)	-	-	-	-	-	-	-	-
<b>EXCHANGERS</b>									
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>									
Water flow	(1) l/s	21,50	23,62	25,39	31,69	37,82	43,81	49,20	54,80
Pressure drop	(1) kPa	30,0	33,3	38,4	32,5	36,7	33,3	42,3	37,0
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>									
Water flow	(3) l/s	23,10	25,28	27,35	33,72	39,77	45,66	51,78	57,69
Pressure drop	(3) kPa	34,6	38,1	44,6	36,8	40,6	36,2	46,9	41,0
<b>REFRIGERANT CIRCUIT</b>									
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	160	185	200	224	270	335	380	420
<b>NOISE LEVEL</b>									
Sound Pressure	(10) dB(A)	79	80	80	80	81	80	82	81
Sound power level in cooling	(11)(12) dB(A)	99	101	101	101	102	102	104	104
Sound power level in heating	(11)(13) dB(A)	99	101	101	101	102	102	104	104
<b>SIZE AND WEIGHT</b>									
Operating weight	(14) kg	5900	6330	6420	7290	9390	10400	10700	11310
A	(14) mm	4900	5800	5800	7000	7900	10000	10000	11800
B	(14) mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(14) mm	2430	2430	2430	2430	2430	2430	2430	2430

- Notes**
- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
  - Values in compliance with EN14511
  - Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
  - Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
  - Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
  - Seasonal energy efficiency ratio
  - Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
  - Seasonal coefficient of performance
  - Seasonal space heating energy efficiency
  - Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
  - Sound power on the basis of measurements made in compliance with ISO 9614.
  - Sound power level in cooling, outdoors.
  - Sound power level in heating, outdoors.
  - Unit in standard configuration/execution, without optional accessories.
- The units highlighted in this publication contain HFC R134a [GWP<sub>100</sub> 1430] fluorinated greenhouse gases.  
**Certified data in EUROVENT**

FOCS-N-Y / CA		2022	2222	2422	2622	2722	3222	3622	4222	4822
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
<b>PERFORMANCE</b>										
<b>COOLING ONLY (GROSS VALUE)</b>										
Cooling capacity	(1) kW	459,6	502,8	537,8	586,0	671,6	802,9	928,9	1041	1162
Total power input	(1) kW	157,8	169,6	181,0	201,6	217,8	259,3	285,0	335,5	370,4
EER	(1) kW/kW	2,913	2,965	2,971	2,907	3,084	3,096	3,259	3,103	3,137
ESEER	(1) kW/kW	3,890	3,930	3,930	3,960	4,370	4,220	4,240	4,250	4,280
<b>COOLING ONLY (EN14511 VALUE)</b>										
Cooling capacity	(1)(2) kW	458,4	501,4	536,1	584,7	669,8	800,6	926,5	1038	1159
EER	(1)(2) kW/kW	2,880	2,930	2,930	2,880	3,050	3,060	3,220	3,060	3,100
ESEER	(1)(2) kW/kW	3,790	3,820	3,800	3,870	4,230	4,080	4,120	4,100	4,150
Cooling energy class		C	B	B	C	B	B	A	B	A
<b>HEATING ONLY (GROSS VALUE)</b>										
Total heating capacity	(3) kW	470,2	520,1	553,2	589,7	682,5	804,4	922,8	1051	1166
Total power input	(3) kW	143,4	156,2	167,3	177,2	197,3	231,9	258,2	300,2	332,8
COP	(3) kW/kW	3,279	3,330	3,307	3,328	3,459	3,469	3,574	3,501	3,504
<b>HEATING ONLY (EN14511 VALUE)</b>										
Total heating capacity	(2)(3) kW	471,5	521,7	555,1	591,1	684,4	806,8	925,2	1054	1169
COP	(2)(3) kW/kW	3,260	3,310	3,280	3,310	3,440	3,440	3,550	3,470	3,480
Cooling energy class		A	A	A	A	A	A	A	A	A
<b>ENERGY EFFICIENCY</b>										
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>										
<b>Process refrigeration at high temperature</b>										
Prated,c	(4) kW	-	-	-	-	669,8	800,6	926,5	1038	1159
SEPR	(4)(6)	-	-	-	-	5,28	5,43	5,38	5,25	5,32
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>										
<b>Process refrigeration at medium temperature</b>										
Prated,c	(5) kW	-	-	-	-	356,2	423,2	489,0	554,8	620,5
SEPR	(5)(6)	-	-	-	-	3,43	3,42	3,33	3,45	3,50
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>										
PDesign	(7) kW	339	368	400	390	-	-	-	-	-
SCOP	(7)(8)	3,44	3,46	3,50	3,61	-	-	-	-	-
Performance ηs	(7)(9)	%	134	135	137	141	-	-	-	-
Seasonal efficiency class	(7)	-	-	-	-	-	-	-	-	-
<b>EXCHANGERS</b>										
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>										
Water flow	(1) l/s	21,98	24,05	25,72	28,02	32,11	38,39	44,42	49,77	55,59
Pressure drop	(1) kPa	31,3	34,5	39,4	26,5	33,4	37,8	34,3	43,3	38,0
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>										
Water flow	(3) l/s	22,70	25,11	26,70	28,47	32,95	38,83	44,55	50,74	56,29
Pressure drop	(3) kPa	33,4	37,6	42,5	27,3	35,2	38,7	34,5	45,0	39,0
<b>REFRIGERANT CIRCUIT</b>										
Compressors nr.	N°	2	2	2	2	2	2	2	2	2
No. Circuits	N°	2	2	2	2	2	2	2	2	2
Refrigerant charge	kg	203	223	220	240	250	340	430	450	537
<b>NOISE LEVEL</b>										
Sound Pressure	(10) dB(A)	79	80	80	80	80	81	80	81	81
Sound power level in cooling	(11)(12) dB(A)	99	101	101	101	101	102	102	104	104
Sound power level in heating	(11)(13) dB(A)	99	101	101	101	101	102	102	104	104
<b>SIZE AND WEIGHT</b>										
Operating weight	(14) kg	6050	6630	6710	6950	7480	9620	10650	11260	11690
A	(14) mm	4900	5800	5800	5800	7000	7900	10000	11800	11800
B	(14) mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(14) mm	2430	2430	2430	2430	2430	2430	2430	2430	2430

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP<sub>100</sub> 1430] fluorinated greenhouse gases.

Certified data in EUROVENT

FOCS-N-Y / LN-CA		2022	2222	2422	2622	2722	3222	3622	4222	4822
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
<b>PERFORMANCE</b>										
<b>COOLING ONLY (GROSS VALUE)</b>										
Cooling capacity	(1) kW	444,3	492,0	524,2	564,0	654,5	779,5	903,5	1013	1130
Total power input	(1) kW	160,1	169,3	182,4	205,4	219,1	261,5	283,2	333,8	371,8
EER	(1) kW/kW	2,775	2,906	2,874	2,746	2,987	2,981	3,190	3,035	3,039
ESEER	(1) kW/kW	3,850	3,920	3,920	3,930	4,330	4,200	4,220	4,230	4,270
<b>COOLING ONLY (EN14511 VALUE)</b>										
Cooling capacity	(1)(2) kW	443,2	490,6	522,6	562,8	652,8	777,4	901,3	1010	1127
EER	(1)(2) kW/kW	2,750	2,870	2,840	2,720	2,960	2,950	3,160	3,000	3,010
ESEER	(1)(2) kW/kW	3,760	3,810	3,800	3,850	4,210	4,080	4,110	4,100	4,140
Cooling energy class		C	C	C	C	B	B	A	B	B
<b>HEATING ONLY (GROSS VALUE)</b>										
Total heating capacity	(3) kW	466,9	520,1	553,2	585,6	682,5	804,4	922,8	1051	1166
Total power input	(3) kW	143,4	156,2	167,3	177,2	197,3	231,9	258,2	300,2	332,8
COP	(3) kW/kW	3,256	3,330	3,307	3,305	3,459	3,469	3,574	3,501	3,504
<b>HEATING ONLY (EN14511 VALUE)</b>										
Total heating capacity	(2)(3) kW	468,2	521,7	555,1	586,9	684,4	806,8	925,2	1054	1169
COP	(2)(3) kW/kW	3,240	3,310	3,280	3,290	3,440	3,440	3,550	3,470	3,480
Cooling energy class		A	A	A	A	A	A	A	A	A
<b>ENERGY EFFICIENCY</b>										
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>										
<b>Process refrigeration at high temperature</b>										
Prated,c	(4) kW	-	-	-	-	652,8	777,4	901,3	1010	1127
SEPR	(4)(6)	-	-	-	-	5,33	5,43	5,39	5,27	5,34
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>										
<b>Process refrigeration at medium temperature</b>										
Prated,c	(5) kW	-	-	-	-	349,5	414,0	480,1	544,3	608,0
SEPR	(5)(6)	-	-	-	-	3,47	3,41	3,34	3,46	3,50
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>										
PDesign	(7) kW	336	368	400	387	-	-	-	-	-
SCOP	(7)(8)	3,41	3,46	3,50	3,58	-	-	-	-	-
Performance ηs	(7)(9)	%	134	135	137	140	-	-	-	-
Seasonal efficiency class	(7)	-	-	-	-	-	-	-	-	-
<b>EXCHANGERS</b>										
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>										
Water flow	(1) l/s	21,25	23,53	25,07	26,97	31,30	37,28	43,21	48,44	54,04
Pressure drop	(1) kPa	29,3	33,0	37,5	24,5	31,7	35,7	32,4	41,1	36,0
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>										
Water flow	(3) l/s	22,54	25,11	26,70	28,27	32,95	38,83	44,55	50,74	56,29
Pressure drop	(3) kPa	32,9	37,6	42,5	26,9	35,2	38,7	34,5	45,0	39,0
<b>REFRIGERANT CIRCUIT</b>										
Compressors nr.	N°	2	2	2	2	2	2	2	2	2
No. Circuits	N°	2	2	2	2	2	2	2	2	2
Refrigerant charge	kg	210	232	247	266	275	340	470	465	518
<b>NOISE LEVEL</b>										
Sound Pressure	(10) dB(A)	73	74	74	74	74	75	74	75	75
Sound power level in cooling	(11)(12) dB(A)	93	95	95	95	95	96	96	98	98
Sound power level in heating	(11)(13) dB(A)	94	96	96	96	96	97	97	99	99
<b>SIZE AND WEIGHT</b>										
Operating weight	(14) kg	6120	6610	6700	6930	7580	9730	10800	11400	11860
A	(14) mm	4900	5800	5800	5800	7000	7900	10000	11800	11800
B	(14) mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(14) mm	2430	2430	2430	2430	2430	2430	2430	2430	2430

- Notes**
- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
  - Values in compliance with EN14511
  - Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
  - Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
  - Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
  - Seasonal energy efficiency ratio
  - Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
  - Seasonal coefficient of performance
  - Seasonal space heating energy efficiency
  - Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
  - Sound power on the basis of measurements made in compliance with ISO 9614.
  - Sound power level in cooling, outdoors.
  - Sound power level in heating, outdoors.
  - Unit in standard configuration/execution, without optional accessories.
- The units highlighted in this publication contain HFC R134a [GWP<sub>100</sub> 1430] fluorinated greenhouse gases.  
**Certified data in EUROVENT**



FOCS-N-Y / SL-CA		2022	2222	2422	2622	2722	3222	3622	4222	4822
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
<b>PERFORMANCE</b>										
<b>COOLING ONLY (GROSS VALUE)</b>										
Cooling capacity	(1) kW	440,7	487,9	519,6	558,6	648,7	771,5	895,0	1004	1119
Total power input	(1) kW	162,6	171,6	184,8	208,7	221,5	264,5	285,2	336,2	375,4
EER	(1) kW/kW	2,710	2,843	2,812	2,677	2,929	2,917	3,138	2,986	2,981
ESEER	(1) kW/kW	3,840	3,910	3,910	3,930	4,360	4,200	4,240	4,270	4,290
<b>COOLING ONLY (EN14511 VALUE)</b>										
Cooling capacity	(1)(2) kW	439,6	486,6	518,0	557,4	647,1	769,4	892,8	1001	1116
EER	(1)(2) kW/kW	2,690	2,810	2,780	2,660	2,900	2,890	3,110	2,950	2,950
ESEER	(1)(2) kW/kW	3,740	3,810	3,790	3,840	4,240	4,080	4,130	4,130	4,160
Cooling energy class		D	C	C	D	B	C	A	B	B
<b>HEATING ONLY (GROSS VALUE)</b>										
Total heating capacity	(3) kW	461,0	514,4	546,4	578,1	674,3	794,3	910,8	1039	1151
Total power input	(3) kW	141,8	154,5	165,5	175,3	194,5	228,6	254,3	295,6	327,9
COP	(3) kW/kW	3,251	3,329	3,302	3,298	3,467	3,475	3,582	3,515	3,510
<b>HEATING ONLY (EN14511 VALUE)</b>										
Total heating capacity	(2)(3) kW	462,3	516,0	548,2	579,4	676,1	796,6	913,1	1042	1154
COP	(2)(3) kW/kW	3,230	3,310	3,280	3,280	3,440	3,450	3,560	3,490	3,490
Cooling energy class		A	A	A	A	A	A	A	A	A
<b>ENERGY EFFICIENCY</b>										
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>										
<b>Process refrigeration at high temperature</b>										
Prated,c	(4) kW	-	-	-	-	647,1	769,4	892,8	1001	1116
SEPR	(4)(6)	-	-	-	-	5,35	5,43	5,40	5,30	5,35
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>										
<b>Process refrigeration at medium temperature</b>										
Prated,c	(5) kW	-	-	-	-	347,2	410,9	477,2	541,0	603,9
SEPR	(5)(6)	-	-	-	-	3,52	3,44	3,37	3,50	3,54
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>										
PDesign	(7) kW	337	368	361	389	-	-	-	-	-
SCOP	(7)(8)	3,44	3,49	3,46	3,61	-	-	-	-	-
Performance ηs	(7)(9)	%	135	137	135	142	-	-	-	-
Seasonal efficiency class	(7)	-	-	-	-	-	-	-	-	-
<b>EXCHANGERS</b>										
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>										
Water flow	(1) l/s	21,08	23,33	24,85	26,71	31,02	36,90	42,80	48,01	53,53
Pressure drop	(1) kPa	28,8	32,5	36,8	24,0	31,2	34,9	31,8	40,3	35,3
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>										
Water flow	(3) l/s	22,25	24,83	26,37	27,90	32,55	38,34	43,96	50,17	55,56
Pressure drop	(3) kPa	32,1	36,8	41,5	26,2	34,3	37,7	33,6	44,0	38,0
<b>REFRIGERANT CIRCUIT</b>										
Compressors nr.	N°	2	2	2	2	2	2	2	2	2
No. Circuits	N°	2	2	2	2	2	2	2	2	2
Refrigerant charge	kg	211	233	248	267	276	340	470	466	520
<b>NOISE LEVEL</b>										
Sound Pressure	(10) dB(A)	69	70	70	70	70	71	70	71	71
Sound power level in cooling	(11)(12) dB(A)	89	91	91	91	91	92	92	94	94
Sound power level in heating	(11)(13) dB(A)	90	92	92	92	92	93	93	95	95
<b>SIZE AND WEIGHT</b>										
Operating weight	(14) kg	6190	6680	6770	7010	7650	9820	10890	11510	11950
A	(14) mm	4900	5800	5800	5800	7000	7900	10000	11800	11800
B	(14) mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(14) mm	2430	2430	2430	2430	2430	2430	2430	2430	2430

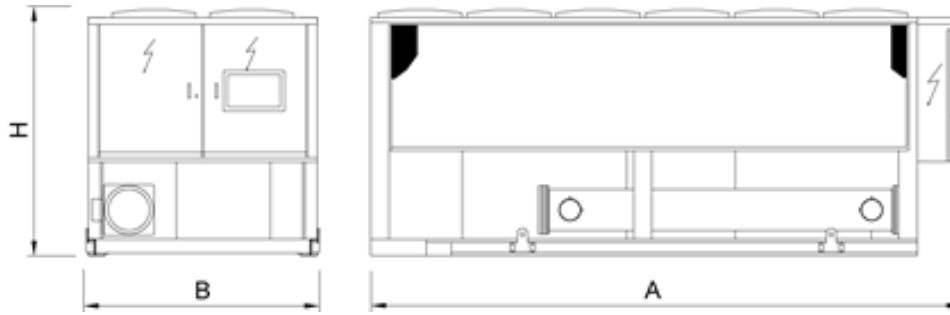
**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP<sub>100</sub> 1430] fluorinated greenhouse gases.

Certified data in EUROVENT

**Dimensional drawing**





**Outdoor heat pump unit for the production of chilled/hot water with semi-hermetic screw compressors optimized for R513A, axial-flow fans, external coil with copper tubes and aluminium fins, shell and tubes heat exchanger designed by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. and electronic expansion valve.**

**Base and supporting structure and panels are galvanized epoxy powder coated steel with increased thickness.**

**These units are designed for two-pipes systems and are able to produce hot or cold water according to the selected operation mode; the precise thermoregulation guarantees an optimal response to load's changes, in every operating condition.**

### Control



#### Electronic control W3000 TE

W3000TE features a large keyboard and wide LCD display for an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements. Complete alarm management system is available, with the "black-box" and the alarm history display functions. For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices. Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks.

Compatibility with remote keyboard (up to 8 units). The programmable timer allows the creation of an operating profile up to 4 typical days and 10 time bands. Continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

### Refrigerant



### Versions

B	Basic	SL-CA	Super Low noise version, Class A of efficiency
CA	Class A of efficiency		
LN-CA	Low Noise, Class A of efficiency		

### Configurations

-	Basic function	D	Partial condensing heat recovery function
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### Features

#### HIGH EFFICIENCY

Unit in Class A as per Eurovent (in heating). High efficiency for low energy consumption during the operating hours.

#### LOW GWP REFRIGERANT

New generation refrigerant R513A, with reduced greenhouse effect in comparison with traditional HFC refrigerants (Global Warming Potential GWP of R513A = 572, GWP of R134a = 1300 as per IPCC rev. 5th) and zero impact on the ozone layer. Not flammable (ASHRAE 34, ISO 817: class A1).

#### SMART DEFROST

The advanced self-adaptive proprietary defrosting logics take into account all the operating parameters and the external conditions: the number and duration of the defrost cycles are therefore reduced to the minimum necessary ensuring an increase in efficiency and net heating capacity of the units.

#### COMPACTNESS

Reduced dimensions, for easy installation even in sites with space constraints

#### WIDE OPERATING RANGE

Unit's operation guaranteed with external air temperature down to -10 °C during winter and up to 50 °C during summer.

#### HOT WATER SUPPLY

Supply of hot water in use up to 60°C, offering maximum versatility with respect to different plant engineering solutions

### Accessories

- Hydronic group
- VPF (Variable Primary Flow) kit: variable flow pumps with on board regulation
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Kit HWT, High Water Temperature, to produce hot water up to 60°C
- Soft start

FOCS-N-G05-Y/B		2022	2222	2422	2722	3222	3622	4222	4822
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
<b>PERFORMANCE</b>									
<b>COOLING ONLY (GROSS VALUE)</b>									
Cooling capacity	(1) kW	449,7	494,0	530,9	662,8	790,9	916,2	1029	1146
Total power input	(1) kW	169,5	184,1	193,9	233,6	278,2	304,4	350,4	396,9
EER	(1) kW/kW	2,653	2,683	2,738	2,837	2,843	3,010	2,937	2,887
ESEER	(1) kW/kW	3,640	3,680	3,740	4,130	4,020	4,000	4,120	4,040
<b>COOLING ONLY (EN14511 VALUE)</b>									
Cooling capacity	(1)(2) kW	448,5	492,6	529,3	661,1	788,7	913,9	1026	1143
EER	(1)(2) kW/kW	2,630	2,660	2,710	2,810	2,810	2,980	2,900	2,860
ESEER	(1)(2) kW/kW	3,540	3,580	3,620	4,020	3,910	3,900	3,980	3,930
Cooling energy class		D	D	C	C	C	B	B	C
<b>HEATING ONLY (GROSS VALUE)</b>									
Total heating capacity	(3) kW	483,4	528,9	568,2	705,5	832,1	955,4	1083	1207
Total power input	(3) kW	158,4	172,5	185,0	218,9	257,0	288,0	328,4	369,9
COP	(3) kW/kW	3,052	3,066	3,071	3,223	3,238	3,317	3,298	3,263
<b>HEATING ONLY (EN14511 VALUE)</b>									
Total heating capacity	(2)(3) kW	484,8	530,6	570,2	707,6	834,7	958,0	1087	1211
COP	(2)(3) kW/kW	3,030	3,050	3,050	3,200	3,220	3,300	3,270	3,240
Cooling energy class		B	B	B	A	A	A	A	A
<b>ENERGY EFFICIENCY</b>									
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>									
<b>Process refrigeration at high temperature</b>									
Prated,c	(4) kW	-	-	-	661,1	788,7	913,9	1026	1143
SEPR	(4)(6)	-	-	-	5,09	5,23	5,00	5,03	5,04
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>									
<b>Process refrigeration at medium temperature</b>									
Prated,c	(5) kW	-	-	-	352,7	418,4	-	550,3	614,1
SEPR	(5)(6)	-	-	-	3,22	3,22	-	3,22	3,22
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>									
PDesign	(7) kW	339	366	400	-	-	-	-	-
SCOP	(7)(8)	3,19	3,20	3,19	-	-	-	-	-
Performance ηs	(7)(9) %	125	125	125	-	-	-	-	-
Seasonal efficiency class	(7)	-	-	-	-	-	-	-	-
<b>EXCHANGERS</b>									
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>									
Water flow	(1) l/s	21,50	23,62	25,39	31,69	37,82	43,81	49,20	54,80
Pressure drop	(1) kPa	30,0	33,3	38,4	32,5	36,7	33,3	42,3	37,0
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>									
Water flow	(3) l/s	23,33	25,53	27,43	34,06	40,17	46,12	52,30	58,27
Pressure drop	(3) kPa	35,3	38,9	44,8	37,6	41,4	36,9	47,9	41,8
<b>REFRIGERANT CIRCUIT</b>									
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	184	213	230	258	311	385	437	483
<b>NOISE LEVEL</b>									
Sound Pressure	(10) dB(A)	79	80	80	80	81	80	82	81
Sound power level in cooling	(11)(12) dB(A)	99	101	101	101	102	102	104	104
Sound power level in heating	(11)(13) dB(A)	99	101	101	101	102	102	104	104
<b>SIZE AND WEIGHT</b>									
Operating weight	(14) kg	5900	6330	6420	7290	9390	10400	10700	11310
A	(14) mm	4900	5800	5800	7000	7900	10000	10000	11800
B	(14) mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(14) mm	2430	2430	2430	2430	2430	2430	2430	2430

- Notes**
- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
  - Values in compliance with EN14511
  - Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
  - Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
  - Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
  - Seasonal energy efficiency ratio
  - Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
  - Seasonal coefficient of performance
  - Seasonal space heating energy efficiency
  - Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
  - Sound power on the basis of measurements made in compliance with ISO 9614.
  - Sound power level in cooling, outdoors.
  - Sound power level in heating, outdoors.
  - Unit in standard configuration/execution, without optional accessories.
- The units highlighted in this publication contain R513A [GWP<sub>100</sub> 631] fluorinated greenhouse gases.  
 Certified data in EUROVENT

FOCS-N-G05-Y/CA		2022	2222	2422	2622	2722	3222	3622	4222	4822	
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	
<b>PERFORMANCE</b>											
<b>COOLING ONLY (GROSS VALUE)</b>											
Cooling capacity	(1)	kW	459,6	502,8	537,8	586,0	671,6	802,9	928,9	1041	1162
Total power input	(1)	kW	164,0	176,2	188,1	209,6	226,5	269,8	296,3	348,8	385,2
EER	(1)	kW/kW	2,802	2,854	2,859	2,796	2,965	2,976	3,135	2,985	3,017
ESEER	(1)	kW/kW	3,820	3,850	3,850	3,880	4,290	4,130	4,150	4,160	4,190
<b>COOLING ONLY (EN14511 VALUE)</b>											
Cooling capacity	(1)(2)	kW	458,4	501,4	536,1	584,7	669,8	800,6	926,5	1038	1159
EER	(1)(2)	kW/kW	2,770	2,820	2,820	2,770	2,930	2,940	3,100	2,950	2,980
ESEER	(1)(2)	kW/kW	3,720	3,750	3,730	3,800	4,150	4,000	4,040	4,020	4,070
Cooling energy class			C	C	C	C	B	B	A	B	B
<b>HEATING ONLY (GROSS VALUE)</b>											
Total heating capacity	(3)	kW	474,9	525,3	558,7	595,6	689,4	812,5	932,0	1062	1178
Total power input	(3)	kW	149,3	162,5	174,2	184,5	205,6	241,7	269,1	312,8	346,9
COP	(3)	kW/kW	3,181	3,233	3,207	3,228	3,353	3,362	3,463	3,395	3,396
<b>HEATING ONLY (EN14511 VALUE)</b>											
Total heating capacity	(2)(3)	kW	476,3	526,9	560,6	597,0	691,4	814,9	934,5	1065	1181
COP	(2)(3)	kW/kW	3,160	3,210	3,180	3,210	3,330	3,340	3,440	3,370	3,370
Cooling energy class			B	A	B	A	A	A	A	A	A
<b>ENERGY EFFICIENCY</b>											
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>											
<b>Process refrigeration at high temperature</b>											
Prated,c	(4)	kW	-	-	-	-	669,8	800,6	926,5	1038	1159
SEPR	(4)(6)		-	-	-	-	5,11	5,26	5,21	5,09	5,15
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>											
<b>Process refrigeration at medium temperature</b>											
Prated,c	(5)	kW	-	-	-	-	356,2	423,2	489,0	554,8	620,5
SEPR	(5)(6)		-	-	-	-	3,31	3,31	3,23	3,35	3,39
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>											
PDesign	(7)	kW	342	372	361	393	-	-	-	-	-
SCOP	(7)(8)		3,38	3,41	3,38	3,56	-	-	-	-	-
Performance $\eta_s$	(7)(9)	%	132	133	132	139	-	-	-	-	-
Seasonal efficiency class	(7)		-	-	-	-	-	-	-	-	-
<b>EXCHANGERS</b>											
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>											
Water flow	(1)	l/s	21,98	24,05	25,72	28,02	32,11	38,39	44,42	49,77	55,59
Pressure drop	(1)	kPa	31,3	34,5	39,4	26,5	33,4	37,8	34,3	43,3	38,0
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>											
Water flow	(3)	l/s	22,92	25,36	26,97	28,75	33,28	39,22	44,99	51,24	56,85
Pressure drop	(3)	kPa	34,1	38,3	43,4	27,9	35,9	39,5	35,2	45,9	39,8
<b>REFRIGERANT CIRCUIT</b>											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	233	256	253	276	288	391	495	518	618
<b>NOISE LEVEL</b>											
Sound Pressure	(10)	dB(A)	79	80	80	80	80	81	80	81	81
Sound power level in cooling	(11)(12)	dB(A)	99	101	101	101	101	102	102	104	104
Sound power level in heating	(11)(13)	dB(A)	99	101	101	101	101	102	102	104	104
<b>SIZE AND WEIGHT</b>											
Operating weight	(14)	kg	6050	6630	6710	6950	7480	9620	10650	11260	11690
A	(14)	mm	4900	5800	5800	5800	7000	7900	10000	11800	11800
B	(14)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(14)	mm	2430	2430	2430	2430	2430	2430	2430	2430	2430

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP<sub>100</sub> 631] fluorinated greenhouse gases.

Certified data in EUROVENT

FOCS-N-G05-Y/LN-CA		2022	2222	2422	2622	2722	3222	3622	4222	4822
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
<b>PERFORMANCE</b>										
<b>COOLING ONLY (GROSS VALUE)</b>										
Cooling capacity	(1) kW	444,3	492,0	524,2	564,0	654,5	779,5	903,5	1013	1130
Total power input	(1) kW	166,8	176,3	189,9	214,0	228,4	272,7	295,2	347,9	387,6
EER	(1) kW/kW	2,664	2,791	2,760	2,636	2,866	2,858	3,061	2,912	2,915
ESEER	(1) kW/kW	3,780	3,850	3,840	3,860	4,250	4,110	4,140	4,150	4,190
<b>COOLING ONLY (EN14511 VALUE)</b>										
Cooling capacity	(1)(2) kW	443,2	490,6	522,6	562,8	652,8	777,4	901,3	1010	1127
EER	(1)(2) kW/kW	2,640	2,760	2,730	2,620	2,840	2,830	3,030	2,880	2,890
ESEER	(1)(2) kW/kW	3,680	3,740	3,730	3,780	4,130	4,000	4,030	4,020	4,070
Cooling energy class		D	C	C	D	C	C	B	C	C
<b>HEATING ONLY (GROSS VALUE)</b>										
Total heating capacity	(3) kW	471,6	525,3	558,7	591,5	689,4	812,5	932,0	1062	1178
Total power input	(3) kW	149,3	162,5	174,2	184,5	205,6	241,7	269,1	312,8	346,9
COP	(3) kW/kW	3,159	3,233	3,207	3,206	3,353	3,362	3,463	3,395	3,396
<b>HEATING ONLY (EN14511 VALUE)</b>										
Total heating capacity	(2)(3) kW	472,9	526,9	560,6	592,9	691,4	814,9	934,5	1065	1181
COP	(2)(3) kW/kW	3,140	3,210	3,180	3,190	3,330	3,340	3,440	3,370	3,370
Cooling energy class		B	A	B	B	A	A	A	A	A
<b>ENERGY EFFICIENCY</b>										
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>										
<b>Process refrigeration at high temperature</b>										
Prated,c	(4) kW	-	-	-	-	652,8	777,4	901,3	1010	1127
SEPR	(4)(6)	-	-	-	-	5,16	5,26	5,22	5,11	5,17
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>										
<b>Process refrigeration at medium temperature</b>										
Prated,c	(5) kW	-	-	-	-	349,5	414,0	480,1	544,3	608,0
SEPR	(5)(6)	-	-	-	-	3,36	3,30	3,23	3,35	3,40
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>										
PDesign	(7) kW	340	372	361	391	-	-	-	-	-
SCOP	(7)(8)	3,36	3,41	3,38	3,53	-	-	-	-	-
Performance ηs	(7)(9)	%	131	133	132	138	-	-	-	-
Seasonal efficiency class	(7)	-	-	-	-	-	-	-	-	-
<b>EXCHANGERS</b>										
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>										
Water flow	(1) l/s	21,25	23,53	25,07	26,97	31,30	37,28	43,21	48,44	54,04
Pressure drop	(1) kPa	29,3	33,0	37,5	24,5	31,7	35,7	32,4	41,1	36,0
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>										
Water flow	(3) l/s	22,77	25,36	26,97	28,55	33,28	39,22	44,99	51,24	56,85
Pressure drop	(3) kPa	33,6	38,3	43,4	27,5	35,9	39,5	35,2	45,9	39,8
<b>REFRIGERANT CIRCUIT</b>										
Compressors nr.	N°	2	2	2	2	2	2	2	2	2
No. Circuits	N°	2	2	2	2	2	2	2	2	2
Refrigerant charge	kg	242	267	284	306	316	391	541	535	596
<b>NOISE LEVEL</b>										
Sound Pressure	(10) dB(A)	73	74	74	74	74	75	74	75	75
Sound power level in cooling	(11)(12) dB(A)	93	95	95	95	95	96	96	98	98
Sound power level in heating	(11)(13) dB(A)	94	96	96	96	96	97	97	99	99
<b>SIZE AND WEIGHT</b>										
Operating weight	(14) kg	6120	6610	6700	6930	7580	9730	10800	11400	11860
A	(14) mm	4900	5800	5800	5800	7000	7900	10000	11800	11800
B	(14) mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(14) mm	2430	2430	2430	2430	2430	2430	2430	2430	2430

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP<sub>100</sub> 631] fluorinated greenhouse gases.  
**Certified data in EUROVENT**

FOCS-N-G05-Y/SL-CA		2022	2222	2422	2622	2722	3222	3622	4222	4822
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
<b>PERFORMANCE</b>										
<b>COOLING ONLY (GROSS VALUE)</b>										
Cooling capacity	(1) kW	440,7	487,9	519,6	558,6	648,7	771,5	895,0	1004	1119
Total power input	(1) kW	169,4	178,7	192,6	217,5	231,0	275,9	297,4	350,6	391,5
EER	(1) kW/kW	2,602	2,730	2,698	2,568	2,808	2,796	3,009	2,864	2,858
ESEER	(1) kW/kW	3,760	3,840	3,830	3,850	4,270	4,110	4,150	4,180	4,200
<b>COOLING ONLY (EN14511 VALUE)</b>										
Cooling capacity	(1)(2) kW	439,6	486,6	518,0	557,4	647,1	769,4	892,8	1001	1116
EER	(1)(2) kW/kW	2,580	2,700	2,670	2,550	2,780	2,770	2,980	2,830	2,830
ESEER	(1)(2) kW/kW	3,670	3,740	3,710	3,770	4,160	3,990	4,040	4,040	4,080
Cooling energy class		D	C	D	D	C	C	B	C	C
<b>HEATING ONLY (GROSS VALUE)</b>										
Total heating capacity	(3) kW	465,6	519,6	551,8	583,9	681,1	802,2	919,9	1050	1162
Total power input	(3) kW	147,7	160,8	172,4	182,6	202,8	238,4	265,1	308,1	341,9
COP	(3) kW/kW	3,152	3,231	3,201	3,198	3,358	3,365	3,470	3,408	3,399
<b>HEATING ONLY (EN14511 VALUE)</b>										
Total heating capacity	(2)(3) kW	466,9	521,2	553,7	585,2	683,0	804,6	922,3	1053	1165
COP	(2)(3) kW/kW	3,130	3,210	3,180	3,180	3,340	3,340	3,450	3,380	3,380
Cooling energy class		B	A	B	B	A	A	A	A	A
<b>ENERGY EFFICIENCY</b>										
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>										
<b>Process refrigeration at high temperature</b>										
Prated,c	(4) kW	-	-	-	-	647,1	769,4	892,8	1001	1116
SEPR	(4)(6)	-	-	-	-	5,18	5,26	5,23	5,14	5,19
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>										
<b>Process refrigeration at medium temperature</b>										
Prated,c	(5) kW	-	-	-	-	347,2	410,9	477,2	541,0	603,9
SEPR	(5)(6)	-	-	-	-	3,40	3,33	3,27	3,39	3,43
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>										
PDesign	(7) kW	340	371	365	393	-	-	-	-	-
SCOP	(7)(8)	3,39	3,44	3,41	3,56	-	-	-	-	-
Performance ηs	(7)(9)	%	132	135	134	139	-	-	-	-
Seasonal efficiency class	(7)	-	-	-	-	-	-	-	-	-
<b>EXCHANGERS</b>										
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>										
Water flow	(1) l/s	21,08	23,33	24,85	26,71	31,02	36,90	42,80	48,01	53,53
Pressure drop	(1) kPa	28,8	32,5	36,8	24,0	31,2	34,9	31,8	40,3	35,3
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>										
Water flow	(3) l/s	22,47	25,08	26,64	28,18	32,88	38,72	44,40	50,67	56,11
Pressure drop	(3) kPa	32,7	37,5	42,3	26,8	35,0	38,5	34,2	44,9	38,8
<b>REFRIGERANT CIRCUIT</b>										
Compressors nr.	N°	2	2	2	2	2	2	2	2	2
No. Circuits	N°	2	2	2	2	2	2	2	2	2
Refrigerant charge	kg	243	268	285	307	317	391	541	536	598
<b>NOISE LEVEL</b>										
Sound Pressure	(10) dB(A)	69	70	70	70	70	71	70	71	71
Sound power level in cooling	(11)(12) dB(A)	89	91	91	91	91	92	92	94	94
Sound power level in heating	(11)(13) dB(A)	90	92	92	92	92	93	93	95	95
<b>SIZE AND WEIGHT</b>										
Operating weight	(14) kg	6190	6680	6770	7010	7650	9820	10890	11510	11950
A	(14) mm	4900	5800	5800	5800	7000	7900	10000	11800	11800
B	(14) mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(14) mm	2430	2430	2430	2430	2430	2430	2430	2430	2430

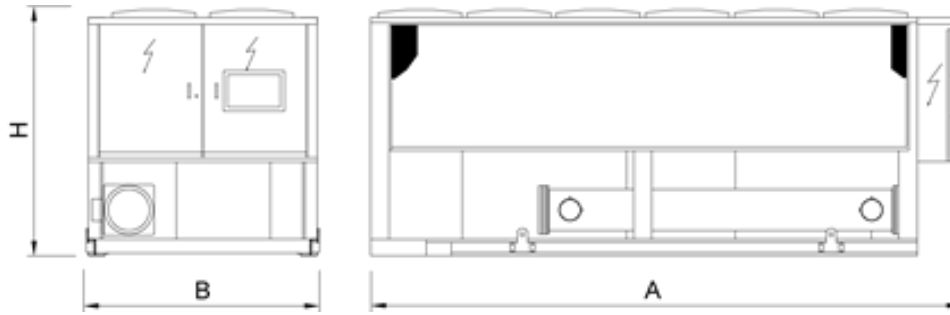
**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain R513A [GWP<sub>100</sub> 631] fluorinated greenhouse gases.

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Dimensional drawing







Heat pump for indoor installation to produce chilled/hot water with hermetic rotary Scroll compressors, centrifugal plug fans with EC motor, braze-welded plate-type exchanger and thermal expansion valve. Structure and the external paneling made from hot-galvanised metal plate and painted with epoxy powder coat RAL 7035. The panels are easy to remove for quick and easy access to the inside components from either side of the unit.

The range includes the single-circuit two-compressor versions and the dual circuit four-compressor versions.

### Control



#### Electronic control W3000TE

W3000TE Compact features function controls and LCD display for viewing data and activating the unit, via a multilevel menu, with settable display language. As alternative, the innovative KIPLink user interface allows one to operate on the unit directly from the smartphone or tablet. The controller provides water temperature control for the heating systems, cooling systems (only for reversible units), as well as for domestic hot water (only for reversible units). These different temperatures are managed automatically based on the different conditions in which the system operates, with the possibility to assign specific levels of priority to domestic hot water production, depending on the needs of the application. Regulation based on the exclusive QuickMind algorithm, including self-adaptive control logics, beneficial in low water content systems. As alternatives, the proportional- or proportional- integral regulations are also available. Complete alarm management system is available, with the "black-box" and the alarm history display functions.

For multiple units' systems, the regulation of the resources, via optional proprietary devices, can be implemented. Energy metering, for both consumption and capacity, can also be developed. Built-in clock can create an operating profile containing up to 4 typical days and 10 time bands, essential for efficient programming of energy production and fundamental for managing the Legionella prevention cycles. Supervision is available either using proprietary devices or by integration into third party systems using ModBus, BACnet, BACnet-over-IP and Echelon LonWorks protocols. A dedicated wall-mounted keypad can be used for remote control of all the functions.

Optionally (VPF package), capacity modulation can be integrated with hydraulic flow modulation, thanks to inverter-driven pumps and to specific resources for the hydraulic circuit.

### Refrigerant



### Versions

K	Standard efficiency	A	High efficiency
SL-K	Super low noise, standard efficiency		

### Configurations

-	Basic function	D	Partial condensing heat recovery function
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### Features

#### HIGH EFFICIENCY

Very high efficiency at full and partial load, at the highest market levels, thanks to the adopted technological solutions. These units ensure low operating costs and therefore a quick payback time.

#### ErP READY

The highest level of efficiency at part load can meet and exceed the minimum seasonal efficiency for heating, SCOP according with the eco-sustainable design requirements for all products using energy.

#### PLUG FUN WITH EC MOTOR

More air flow by smaller diameter.

Energy cost saving by highest efficiency at the operating point.

Fan is directly coupling with motor, no energy lost due to the transmission (belts and pulleys). External rotor fitted with permanent magnets. Outstanding efficiency even at partial load range, due to the lack of brushes and lower consumption in every working condition in order to achieve a better seasonal efficiency in accordance with ErP Directive.

#### TOTAL VERSATILITY

Horizontal or vertical air flow.

#### INTEGRATED HYDRONIC MODULE

The built-in hydronic module already contains the main water circuit components; it is available as option with single or twin in-line pump, for achieving low or high head, fixed or variable speed.

### Accessories

- Soft starters
- Set-up for remote connectivity with ModBus, Echelon, Bacnet, Bacnet over-IP.
- Outside air temperature probe for plant water set point compensation.
- Horizontal or vertical air outflow
- Hydronic module available in different configurations with 1 or 2 pumps fixed speed or variable speed, for achieving both low or high head.
- VPF (Variable Primary Flow) system
- Electronic expansion valve

NX-CN-Y /K		0072	0092	0102	0122	0152	0182	0202	0232
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
<b>PERFORMANCE</b>									
<b>COOLING ONLY (GROSS VALUE)</b>									
Cooling capacity	(1) kW	18,37	22,60	25,76	30,34	37,95	44,87	51,74	57,71
Total power input	(1) kW	6,265	8,327	9,752	11,60	12,81	14,82	17,67	20,36
EER	(1) kW/kW	2,935	2,713	2,646	2,612	2,969	3,034	2,921	2,828
ESEER	(1) kW/kW	4,410	4,190	4,100	3,180	4,250	4,260	4,180	4,100
<b>COOLING ONLY (EN14511 VALUE)</b>									
Cooling capacity	(1)(2) kW	18,30	22,50	25,70	30,20	37,80	44,70	51,50	57,50
EER	(1)(2) kW/kW	2,940	2,710	2,660	2,630	2,980	3,060	2,940	2,850
ESEER	(1)(2) kW/kW	4,290	4,090	4,030	3,140	4,170	4,210	4,140	4,050
Cooling energy class		A	A	B	B	A	A	A	A
<b>HEATING ONLY (GROSS VALUE)</b>									
Total heating capacity	(3) kW	19,16	23,87	28,02	31,79	41,48	48,41	55,64	61,74
Total power input	(3) kW	6,864	8,851	10,57	12,08	13,78	15,96	18,58	21,11
COP	(3) kW/kW	2,799	2,701	2,642	2,628	3,007	3,025	2,989	2,924
<b>HEATING ONLY (EN14511 VALUE)</b>									
Total heating capacity	(2)(3) kW	19,30	24,00	28,10	31,90	41,70	48,60	55,80	61,90
COP	(2)(3) kW/kW	2,830	2,720	2,670	2,650	3,040	3,060	3,020	2,950
Cooling energy class		B	C	C	C	A	A	A	B
<b>ENERGY EFFICIENCY</b>									
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>									
<b>Process refrigeration at high temperature</b>									
Prated,c	(4) kW	-	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>									
<b>Process refrigeration at medium temperature</b>									
Prated,c	(5) kW	-	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>									
PDesign	(7) kW	14,5	17,9	21,4	24,5	32,1	37,5	43,0	47,9
SCOP	(7)(8)	3,56	3,53	3,52	3,46	3,71	3,71	3,67	3,64
Performance ηs	(7)(9) %	140	138	138	136	145	145	144	142
Seasonal efficiency class	(7)	A+	A+	A+	A+	A+	A+	A+	A+
<b>EXCHANGERS</b>									
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>									
Water flow	(1) l/s	0,878	1,081	1,232	1,451	1,815	2,146	2,474	2,760
Pressure drop	(1) kPa	16,7	18,2	16,6	18,3	19,1	16,6	17,3	17,1
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>									
Water flow	(3) l/s	0,925	1,152	1,352	1,535	2,002	2,337	2,686	2,980
Pressure drop	(3) kPa	18,6	20,7	20,1	20,4	23,2	19,6	20,4	19,9
<b>REFRIGERANT CIRCUIT</b>									
Compressors nr.	N°	2	2	2	2	2	2	2	2
No. Circuits	N°	1	1	1	1	1	1	1	1
Refrigerant charge	kg	8,20	8,50	8,90	9,10	19,0	20,2	21,1	21,5
<b>FANS</b>									
Air flow	m³/s	2,08	2,50	3,33	3,47	4,44	5,42	5,69	5,97
Available static pressure	Pa	30	30	30	30	30	30	30	30
<b>NOISE LEVEL</b>									
Sound power level in cooling	(10)(11)(12) dB(A)	80	81	82	82	81	84	85	86
Sound power level in heating	(10)(12)(13) dB(A)	70	70	70	70	80	80	80	80
Sound power level in heating	(10)(12)(14) dB(A)	80	81	82	82	81	84	85	86
<b>SIZE AND WEIGHT</b>									
A	(15) mm	1500	1500	1500	1500	2480	2480	2480	2480
B	(15) mm	900	900	900	900	1100	1100	1100	1100
H	(15) mm	1910	1910	1910	1910	2100	2100	2100	2100
Operating weight	(15) kg	430	440	460	470	810	840	840	860

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
  - Values in compliance with EN14511
  - Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
  - Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
  - Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
  - Seasonal energy efficiency ratio
  - Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
  - Seasonal coefficient of performance
  - Seasonal space heating energy efficiency
  - Total sound power of fans, as declared by the maker, at the rated speed of rotation and a useful static head of nominal on the delivery side.
  - Sound power level in cooling, outdoors.
  - Sound power on the basis of measurements made in compliance with ISO 9614.
  - Sound power level in heating, indoors.
  - Sound power level in heating, outdoors.
  - Unit in standard configuration/execution, without optional accessories.
- The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.  
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NX-CN-Y /K		0272	0302	0352	0402	0452	0502	0552	0602
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
<b>PERFORMANCE</b>									
<b>COOLING ONLY (GROSS VALUE)</b>									
Cooling capacity	(1) kW	66,12	74,94	85,04	94,47	106,8	121,1	135,9	151,4
Total power input	(1) kW	23,80	27,29	32,31	35,39	40,67	44,20	52,32	59,85
EER	(1) kW/kW	2,777	2,744	2,632	2,669	2,624	2,740	2,598	2,532
ESEER	(1) kW/kW	4,090	3,930	3,820	3,830	3,780	3,910	3,760	3,700
<b>COOLING ONLY (EN14511 VALUE)</b>									
Cooling capacity	(1)(2) kW	65,90	74,70	84,80	94,30	106,6	120,8	135,6	151,1
EER	(1)(2) kW/kW	2,790	2,770	2,650	2,690	2,650	2,760	2,620	2,550
ESEER	(1)(2) kW/kW	4,060	3,920	3,790	3,830	3,760	3,900	3,740	3,680
Cooling energy class		A	A	B	B	B	A	B	B
<b>HEATING ONLY (GROSS VALUE)</b>									
Total heating capacity	(3) kW	70,72	79,49	89,35	102,2	114,6	131,1	146,9	162,9
Total power input	(3) kW	24,29	28,02	32,71	36,57	41,21	45,16	52,95	60,43
COP	(3) kW/kW	2,909	2,839	2,734	2,792	2,782	2,900	2,777	2,697
<b>HEATING ONLY (EN14511 VALUE)</b>									
Total heating capacity	(2)(3) kW	70,90	79,70	89,60	102,5	114,9	131,4	147,3	163,3
COP	(2)(3) kW/kW	2,940	2,870	2,760	2,820	2,810	2,930	2,810	2,730
Cooling energy class		B	B	C	B	B	B	B	C
<b>ENERGY EFFICIENCY</b>									
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>									
<b>Process refrigeration at high temperature</b>									
Prated,c	(4) kW	-	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>									
<b>Process refrigeration at medium temperature</b>									
Prated,c	(5) kW	-	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>									
PDesign	(7) kW	54,9	61,7	69,1	78,7	88,2	101	113	126
SCOP	(7)(8)	3,55	3,49	3,40	3,42	3,40	3,56	3,47	3,33
Performance $\eta_s$	(7)(9) %	139	137	133	134	133	139	136	130
Seasonal efficiency class	(7)	A+	A+	A+	-	-	-	-	-
<b>EXCHANGERS</b>									
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>									
Water flow	(1) l/s	3,162	3,584	4,067	4,518	5,107	5,791	6,500	7,240
Pressure drop	(1) kPa	12,9	12,6	13,5	13,2	13,5	13,3	14,3	14,9
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>									
Water flow	(3) l/s	3,414	3,837	4,313	4,932	5,532	6,328	7,091	7,864
Pressure drop	(3) kPa	15,1	14,4	15,2	15,7	15,8	15,9	17,0	17,6
<b>REFRIGERANT CIRCUIT</b>									
Compressors nr.	N°	2	2	2	2	2	2	2	2
No. Circuits	N°	1	1	1	1	1	1	1	1
Refrigerant charge	kg	27,1	23,6	24,6	32,2	33,0	38,9	39,9	40,8
<b>FANS</b>									
Air flow	m³/s	7,50	8,06	8,89	10,56	11,11	12,50	13,89	15,83
Available static pressure	Pa	30	30	30	30	30	30	30	30
<b>NOISE LEVEL</b>									
Sound power level in cooling	(10)(11)(12) dB(A)	84	85	87	87	84	90	92	90
Sound power level in heating	(10)(12)(13) dB(A)	80	80	80	82	83	83	84	85
Sound power level in heating	(10)(12)(14) dB(A)	84	85	87	87	84	90	92	90
<b>SIZE AND WEIGHT</b>									
A	(15) mm	2480	2480	2480	2980	2980	3970	3970	3970
B	(15) mm	1100	1100	1100	1260	1260	1260	1260	1260
H	(15) mm	2100	2100	2100	2100	2100	2100	2100	2100
Operating weight	(15) kg	920	960	1020	1260	1280	1510	1530	1610

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Total sound power of fans, as declared by the maker, at the rated speed of rotation and a useful static head of nominal on the delivery side.
- Sound power level in cooling, outdoors.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in heating, indoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.

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NX-CN-Y /K		0702	0524	0604	0704	0804	0904	1004	1104
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
<b>PERFORMANCE</b>									
<b>COOLING ONLY (GROSS VALUE)</b>									
Cooling capacity	(1) kW	173,1	124,8	144,0	167,2	186,9	216,9	241,1	265,3
Total power input	(1) kW	66,44	47,29	56,52	63,94	74,42	81,79	93,22	108,2
EER	(1) kW/kW	2,607	2,638	2,549	2,617	2,512	2,652	2,587	2,452
ESEER	(1) kW/kW	3,790	4,050	3,920	4,070	3,890	4,060	3,960	3,920
<b>COOLING ONLY (EN14511 VALUE)</b>									
Cooling capacity	(1)(2) kW	172,7	124,4	143,6	166,8	186,4	216,4	240,5	264,7
EER	(1)(2) kW/kW	2,620	2,650	2,560	2,640	2,530	2,670	2,600	2,460
ESEER	(1)(2) kW/kW	3,770	3,960	3,830	4,000	3,820	3,990	3,890	3,860
Cooling energy class		B	B	B	B	B	B	B	C
<b>HEATING ONLY (GROSS VALUE)</b>									
Total heating capacity	(3) kW	187,1	135,0	156,7	179,9	199,1	231,1	256,0	283,1
Total power input	(3) kW	65,32	48,20	57,36	65,09	74,79	82,87	93,29	105,0
COP	(3) kW/kW	2,865	2,801	2,730	2,763	2,662	2,788	2,744	2,696
<b>HEATING ONLY (EN14511 VALUE)</b>									
Total heating capacity	(2)(3) kW	187,6	135,4	157,2	180,4	199,6	231,7	256,7	283,8
COP	(2)(3) kW/kW	2,900	2,830	2,760	2,790	2,690	2,820	2,770	2,720
Cooling energy class		B	B	C	C	C	B	C	C
<b>ENERGY EFFICIENCY</b>									
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>									
<b>Process refrigeration at high temperature</b>									
Prated,c	(4) kW	-	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>									
<b>Process refrigeration at medium temperature</b>									
Prated,c	(5) kW	-	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>									
PDesign	(7) kW	144	105	122	139	153	178	196	218
SCOP	(7)(8)	3,46	3,62	3,51	3,56	3,44	3,55	3,55	3,52
Performance $\eta_s$	(7)(9) %	135	142	137	139	135	139	139	138
Seasonal efficiency class	(7)	-	-	-	-	-	-	-	-
<b>EXCHANGERS</b>									
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>									
Water flow	(1) l/s	8,277	5,966	6,887	7,998	8,935	10,37	11,53	12,69
Pressure drop	(1) kPa	15,5	19,6	19,6	19,9	19,9	20,4	20,5	19,6
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>									
Water flow	(3) l/s	9,034	6,518	7,564	8,685	9,613	11,16	12,36	13,67
Pressure drop	(3) kPa	18,5	23,4	23,7	23,5	23,0	23,5	23,5	22,8
<b>REFRIGERANT CIRCUIT</b>									
Compressors nr.	N°	2	4	4	4	4	4	4	4
No. Circuits	N°	1	2	2	2	2	2	2	2
Refrigerant charge	kg	51,4	43,0	44,3	51,5	53,5	68,5	71,0	72,8
<b>FANS</b>									
Air flow	m³/s	18,06	13,06	15,28	17,78	19,44	22,50	24,17	24,17
Available static pressure	Pa	30	30	30	30	30	30	30	30
<b>NOISE LEVEL</b>									
Sound power level in cooling	(10)(11)(12) dB(A)	94	91	90	94	96	91	93	93
Sound power level in heating	(10)(12)(13) dB(A)	85	85	85	86	86	88	90	90
Sound power level in heating	(10)(12)(14) dB(A)	94	91	90	94	96	91	93	93
<b>SIZE AND WEIGHT</b>									
A	(15) mm	4670	3970	3970	4670	4670	5670	5670	5670
B	(15) mm	1260	1260	1260	1260	1260	1260	1260	1260
H	(15) mm	2100	2100	2100	2100	2100	2100	2100	2100
Operating weight	(15) kg	1820	1490	1590	1910	2060	2430	2490	2540

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Total sound power of fans, as declared by the maker, at the rated speed of rotation and a useful static head of nominal on the delivery side.
- Sound power level in cooling, outdoors.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in heating, indoors.
- Sound power level in heating, outdoors.
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Certified data in EUROVENT

NX-CN-Y /SL-K		0072	0092	0102	0122	0152	0182	0202	0232
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
<b>PERFORMANCE</b>									
<b>COOLING ONLY (GROSS VALUE)</b>									
Cooling capacity	(1) kW	18,03	22,02	24,45	28,64	37,03	43,88	50,75	56,21
Total power input	(1) kW	6,123	8,027	9,278	11,11	12,49	14,36	17,16	19,76
EER	(1) kW/kW	2,941	2,740	2,640	2,577	2,960	3,049	2,953	2,838
ESEER	(1) kW/kW	4,470	4,240	4,130	4,270	4,240	4,310	4,230	4,250
<b>COOLING ONLY (EN14511 VALUE)</b>									
Cooling capacity	(1)(2) kW	17,90	21,90	24,40	28,50	36,90	43,70	50,60	56,00
EER	(1)(2) kW/kW	2,950	2,740	2,660	2,590	2,980	3,070	2,970	2,840
ESEER	(1)(2) kW/kW	4,390	4,160	4,090	4,200	4,200	4,270	4,190	4,210
Cooling energy class		A	A	B	B	A	A	A	A
<b>HEATING ONLY (GROSS VALUE)</b>									
Total heating capacity	(3) kW	18,92	23,48	27,08	30,78	40,70	47,57	54,82	60,97
Total power input	(3) kW	6,526	8,199	9,203	10,53	12,96	14,98	17,50	19,90
COP	(3) kW/kW	2,894	2,866	2,946	2,933	3,131	3,173	3,131	3,065
<b>HEATING ONLY (EN14511 VALUE)</b>									
Total heating capacity	(2)(3) kW	19,00	23,60	27,20	30,90	40,90	47,80	55,00	61,20
COP	(2)(3) kW/kW	2,920	2,890	2,990	2,960	3,170	3,210	3,160	3,090
Cooling energy class		B	B	B	B	A	A	A	A
<b>ENERGY EFFICIENCY</b>									
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>									
<b>Process refrigeration at high temperature</b>									
Prated,c	(4) kW	-	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>									
<b>Process refrigeration at medium temperature</b>									
Prated,c	(5) kW	-	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>									
PDesign	(7) kW	14,3	17,6	20,6	23,6	31,4	36,7	42,4	47,2
SCOP	(7)(8)	3,73	3,75	3,90	3,88	3,86	3,87	3,84	3,84
Performance ηs	(7)(9) %	146	147	153	152	151	152	151	150
Seasonal efficiency class	(7)	A+	A+	A++	A++	A++	A++	A++	A++
<b>EXCHANGERS</b>									
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>									
Water flow	(1) l/s	0,862	1,053	1,169	1,370	1,771	2,098	2,427	2,688
Pressure drop	(1) kPa	16,1	17,3	15,0	16,3	18,2	15,8	16,7	16,2
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>									
Water flow	(3) l/s	0,913	1,133	1,307	1,486	1,964	2,296	2,646	2,943
Pressure drop	(3) kPa	18,1	20,0	18,7	19,2	22,3	19,0	19,8	19,4
<b>REFRIGERANT CIRCUIT</b>									
Compressors nr.	N°	2	2	2	2	2	2	2	2
No. Circuits	N°	1	1	1	1	1	1	1	1
Refrigerant charge	kg	8,20	8,50	18,3	18,5	19,0	20,2	21,1	21,5
<b>FANS</b>									
Air flow	m³/s	1,81	2,08	2,22	2,36	3,61	4,44	4,86	5,14
Available static pressure	Pa	30	30	30	30	30	30	30	30
<b>NOISE LEVEL</b>									
Sound power level in cooling	(10)(11)(12) dB(A)	70	72	71	72	79	76	78	79
Sound power level in heating	(10)(12)(13) dB(A)	60	61	59	60	73	72	74	73
Sound power level in heating	(10)(12)(14) dB(A)	70	72	71	72	79	76	78	79
<b>SIZE AND WEIGHT</b>									
A	(15) mm	1500	1500	2480	2480	2480	2480	2480	2480
B	(15) mm	900	900	1100	1100	1100	1100	1100	1100
H	(15) mm	1910	1910	2100	2100	2100	2100	2100	2100
Operating weight	(15) kg	480	490	820	830	860	920	920	940

**Notes**

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- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
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- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in heating, indoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

NX-CN-Y /SL-K		0272	0302	0352	0402	0452	0502	0552	0602
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
<b>PERFORMANCE</b>									
<b>COOLING ONLY (GROSS VALUE)</b>									
Cooling capacity	(1) kW	64,42	72,59	82,03	91,09	102,9	118,8	132,6	145,7
Total power input	(1) kW	22,59	26,26	30,86	34,70	38,98	43,05	50,48	56,85
EER	(1) kW/kW	2,850	2,760	2,654	2,625	2,638	2,763	2,626	2,561
ESEER	(1) kW/kW	4,350	3,970	4,020	3,830	3,940	3,960	3,960	3,760
<b>COOLING ONLY (EN14511 VALUE)</b>									
Cooling capacity	(1)(2) kW	64,20	72,40	81,80	90,90	102,7	118,5	132,3	145,4
EER	(1)(2) kW/kW	2,870	2,770	2,660	2,640	2,650	2,780	2,640	2,570
ESEER	(1)(2) kW/kW	4,340	3,970	3,990	3,820	3,910	3,930	3,930	3,740
Cooling energy class		A	A	B	B	B	A	B	B
<b>HEATING ONLY (GROSS VALUE)</b>									
Total heating capacity	(3) kW	69,20	77,93	87,39	99,80	111,9	129,4	144,6	159,1
Total power input	(3) kW	22,82	25,75	29,62	33,98	37,33	42,76	49,29	54,28
COP	(3) kW/kW	3,035	3,019	2,953	2,935	3,000	3,023	2,933	2,930
<b>HEATING ONLY (EN14511 VALUE)</b>									
Total heating capacity	(2)(3) kW	69,40	78,10	87,60	100,1	112,2	129,7	145,0	159,5
COP	(2)(3) kW/kW	3,070	3,050	2,980	2,960	3,030	3,050	2,960	2,960
Cooling energy class		A	A	B	B	A	A	B	B
<b>ENERGY EFFICIENCY</b>									
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>									
<b>Process refrigeration at high temperature</b>									
Prated,c	(4) kW	-	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>									
<b>Process refrigeration at medium temperature</b>									
Prated,c	(5) kW	-	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>									
PDesign	(7) kW	53,7	60,3	67,3	76,5	85,8	99,2	111	122
SCOP	(7)(8)	3,86	3,69	3,67	3,56	3,67	3,69	3,66	3,57
Performance $\eta_s$	(7)(9) %	151	145	144	139	144	145	143	140
Seasonal efficiency class	(7)	A++	A+	A+	-	-	-	-	-
<b>EXCHANGERS</b>									
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>									
Water flow	(1) l/s	3,081	3,471	3,923	4,356	4,922	5,682	6,342	6,967
Pressure drop	(1) kPa	12,3	11,8	12,5	12,2	12,5	12,8	13,6	13,8
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>									
Water flow	(3) l/s	3,340	3,762	4,218	4,818	5,403	6,246	6,982	7,680
Pressure drop	(3) kPa	14,4	13,9	14,5	15,0	15,1	15,5	16,5	16,7
<b>REFRIGERANT CIRCUIT</b>									
Compressors nr.	N°	2	2	2	2	2	2	2	2
No. Circuits	N°	1	1	1	1	1	1	1	1
Refrigerant charge	kg	34,1	29,9	31,1	32,2	37,7	38,9	39,9	49,0
<b>FANS</b>									
Air flow	m³/s	6,11	6,39	6,94	8,06	8,61	10,83	11,67	12,22
Available static pressure	Pa	30	30	30	30	30	30	30	30
<b>NOISE LEVEL</b>									
Sound power level in cooling	(10)(11)(12) dB(A)	83	77	78	81	78	83	84	86
Sound power level in heating	(10)(12)(13) dB(A)	75	72	71	76	77	76	76	81
Sound power level in heating	(10)(12)(14) dB(A)	83	77	78	81	78	83	84	86
<b>SIZE AND WEIGHT</b>									
A	(15) mm	2980	2980	2980	2980	3970	3970	3970	4670
B	(15) mm	1260	1260	1260	1260	1260	1260	1260	1260
H	(15) mm	2100	2100	2100	2100	2100	2100	2100	2100
Operating weight	(15) kg	1090	1160	1230	1320	1610	1630	1650	1880

#### Notes

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  - Values in compliance with EN14511
  - Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
  - Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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  - Seasonal energy efficiency ratio
  - Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
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  - Seasonal space heating energy efficiency
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  - Sound power on the basis of measurements made in compliance with ISO 9614.
  - Sound power level in heating, indoors.
  - Sound power level in heating, outdoors.
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Certified data in EUROVENT

NX-CN-Y /SL-K			0702	0524	0604	0704	0804	0904	1004
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
<b>PERFORMANCE</b>									
<b>COOLING ONLY (GROSS VALUE)</b>									
Cooling capacity	(1)	kW	166,5	121,9	139,6	161,4	179,8	212,2	234,1
Total power input	(1)	kW	64,25	45,91	54,26	61,38	70,85	80,14	90,90
EER	(1)	kW/kW	2,593	2,656	2,571	2,629	2,540	2,649	2,575
ESEER	(1)	kW/kW	3,920	4,140	4,000	4,210	3,990	4,160	4,020
<b>COOLING ONLY (EN14511 VALUE)</b>									
Cooling capacity	(1)(2)	kW	166,1	121,6	139,2	161,0	179,4	211,7	233,6
EER	(1)(2)	kW/kW	2,610	2,670	2,580	2,640	2,550	2,660	2,590
ESEER	(1)(2)	kW/kW	3,900	4,050	3,920	4,130	3,920	4,070	3,950
Cooling energy class			B	B	B	B	B	B	B
<b>HEATING ONLY (GROSS VALUE)</b>									
Total heating capacity	(3)	kW	181,8	133,1	153,7	175,9	194,3	227,8	251,1
Total power input	(3)	kW	61,22	45,27	52,59	59,23	67,03	78,57	86,97
COP	(3)	kW/kW	2,971	2,938	2,922	2,971	2,900	2,898	2,886
<b>HEATING ONLY (EN14511 VALUE)</b>									
Total heating capacity	(2)(3)	kW	182,2	133,5	154,2	176,4	194,8	228,4	251,7
COP	(2)(3)	kW/kW	3,000	2,960	2,950	3,000	2,920	2,920	2,910
Cooling energy class			B	B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>									
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>									
<b>Process refrigeration at high temperature</b>									
Prated,c	(4)	kW	-	-	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>									
<b>Process refrigeration at medium temperature</b>									
Prated,c	(5)	kW	-	-	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>									
PDesign	(7)	kW	140	103	118	135	148	175	191
SCOP	(7)(8)		3,67	3,79	3,70	3,82	3,66	3,70	3,71
Performance $\eta_s$	(7)(9)	%	144	148	145	150	144	145	145
Seasonal efficiency class	(7)		-	-	-	-	-	-	-
<b>EXCHANGERS</b>									
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>									
Water flow	(1)	l/s	7,963	5,832	6,675	7,721	8,596	10,15	11,19
Pressure drop	(1)	kPa	14,4	18,7	18,4	18,5	18,4	19,5	19,3
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>									
Water flow	(3)	l/s	8,777	6,427	7,420	8,491	9,379	10,99	12,12
Pressure drop	(3)	kPa	17,5	22,7	22,8	22,4	21,9	22,9	22,7
<b>REFRIGERANT CIRCUIT</b>									
Compressors nr.		N°	2	4	4	4	4	4	4
No. Circuits		N°	1	2	2	2	2	2	2
Refrigerant charge		kg	56,9	43,0	44,3	51,5	53,5	68,5	71,0
<b>FANS</b>									
Air flow		m³/s	13,89	11,11	12,22	13,89	15,00	19,17	19,72
Available static pressure		Pa	30	30	30	30	30	30	30
<b>NOISE LEVEL</b>									
Sound power level in cooling	(10)(11)(12)	dB(A)	89	83	85	81	83	88	88
Sound power level in heating	(10)(12)(13)	dB(A)	80	77	80	73	73	85	85
Sound power level in heating	(10)(12)(14)	dB(A)	89	83	85	81	83	88	88
<b>SIZE AND WEIGHT</b>									
A	(15)	mm	5670	3970	4670	5670	5670	5670	5670
B	(15)	mm	1260	1260	1260	1260	1260	1260	1260
H	(15)	mm	2100	2100	2100	2100	2100	2100	2100
Operating weight	(15)	kg	2120	1610	1840	2310	2460	2550	2610

**Notes**

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- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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Certified data in EUROVENT

NX-CN-Y /A		0072	0092	0102	0122	0152	0182	0202	0232
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
<b>PERFORMANCE</b>									
<b>COOLING ONLY (GROSS VALUE)</b>									
Cooling capacity	(1) kW	18,74	23,01	26,05	30,93	38,29	45,37	52,47	58,35
Total power input	(1) kW	6,090	8,036	8,822	10,59	12,51	14,50	17,28	19,89
EER	(1) kW/kW	3,071	2,861	2,948	2,915	3,064	3,131	3,035	2,930
ESEER	(1) kW/kW	4,610	4,370	4,520	4,600	4,370	4,380	4,290	4,270
<b>COOLING ONLY (EN14511 VALUE)</b>									
Cooling capacity	(1)(2) kW	18,60	22,90	25,90	30,80	38,10	45,20	52,30	58,10
EER	(1)(2) kW/kW	3,090	2,870	2,980	2,930	3,090	3,170	3,060	2,950
ESEER	(1)(2) kW/kW	4,550	4,290	4,510	4,530	4,290	4,340	4,240	4,230
Cooling energy class		A	A	A	A	A	A	A	A
<b>HEATING ONLY (GROSS VALUE)</b>									
Total heating capacity	(3) kW	19,42	24,20	28,26	32,28	41,76	48,86	56,28	62,60
Total power input	(3) kW	6,883	8,795	9,828	11,43	13,67	15,91	18,60	21,23
COP	(3) kW/kW	2,820	2,753	2,879	2,833	3,051	3,075	3,027	2,953
<b>HEATING ONLY (EN14511 VALUE)</b>									
Total heating capacity	(2)(3) kW	19,50	24,30	28,40	32,40	42,00	49,10	56,50	62,80
COP	(2)(3) kW/kW	2,860	2,790	2,930	2,870	3,090	3,130	3,070	2,990
Cooling energy class		B	C	B	B	A	A	A	B
<b>ENERGY EFFICIENCY</b>									
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>									
<b>Process refrigeration at high temperature</b>									
Prated,c	(4) kW	-	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>									
<b>Process refrigeration at medium temperature</b>									
Prated,c	(5) kW	-	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>									
PDesign	(7) kW	14,8	18,2	21,7	24,9	32,4	37,8	43,6	48,6
SCOP	(7)(8)	3,65	3,60	3,86	3,80	3,76	3,76	3,74	3,69
Performance ηs	(7)(9) %	143	141	151	149	147	147	147	145
Seasonal efficiency class	(7)	A+	A+	A++	A+	A+	A+	A+	A+
<b>EXCHANGERS</b>									
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>									
Water flow	(1) l/s	0,896	1,100	1,246	1,479	1,831	2,170	2,509	2,790
Pressure drop	(1) kPa	17,4	18,9	17,0	19,0	19,4	16,9	17,8	17,4
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>									
Water flow	(3) l/s	0,937	1,168	1,364	1,558	2,016	2,358	2,717	3,022
Pressure drop	(3) kPa	19,1	21,3	20,4	21,1	23,5	20,0	20,9	20,5
<b>REFRIGERANT CIRCUIT</b>									
Compressors nr.	N°	2	2	2	2	2	2	2	2
No. Circuits	N°	1	1	1	1	1	1	1	1
Refrigerant charge	kg	8,20	8,50	18,3	18,5	19,0	20,2	21,1	21,5
<b>FANS</b>									
Air flow	m³/s	2,50	2,92	3,75	4,17	4,86	6,11	6,53	6,94
Available static pressure	Pa	30	30	30	30	30	30	30	30
<b>NOISE LEVEL</b>									
Sound power level in cooling	(10)(11)(12) dB(A)	76	79	82	84	86	83	84	85
Sound power level in heating	(10)(12)(13) dB(A)	66	68	70	66	76	79	80	79
Sound power level in heating	(10)(12)(14) dB(A)	76	79	82	84	86	83	84	85
<b>SIZE AND WEIGHT</b>									
A	(15) mm	1500	1500	2480	2480	2480	2480	2480	2480
B	(15) mm	900	900	1100	1100	1100	1100	1100	1100
H	(15) mm	1910	1910	2100	2100	2100	2100	2100	2100
Operating weight	(15) kg	480	490	820	830	860	920	920	940

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
  - Values in compliance with EN14511
  - Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
  - Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
  - Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
  - Seasonal energy efficiency ratio
  - Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
  - Seasonal coefficient of performance
  - Seasonal space heating energy efficiency
  - Total sound power of fans, as declared by the maker, at the rated speed of rotation and a useful static head of nominal on the delivery side.
  - Sound power level in cooling, outdoors.
  - Sound power on the basis of measurements made in compliance with ISO 9614.
  - Sound power level in heating, indoors.
  - Sound power level in heating, outdoors.
  - Unit in standard configuration/execution, without optional accessories.
- The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.  
Certified data in EUROVENT



NX-CN-Y /A			0272	0302	0352	0402	0452	0502	0552	0602
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
<b>PERFORMANCE</b>										
<b>COOLING ONLY (GROSS VALUE)</b>										
Cooling capacity	(1)	kW	66,63	76,02	85,95	94,75	108,3	122,0	136,6	152,7
Total power input	(1)	kW	22,87	26,54	31,09	36,00	39,03	43,81	51,52	57,66
EER	(1)	kW/kW	2,908	2,868	2,762	2,633	2,777	2,785	2,652	2,646
ESEER	(1)	kW/kW	4,350	4,090	4,080	3,880	4,020	3,970	3,930	3,830
<b>COOLING ONLY (EN14511 VALUE)</b>										
Cooling capacity	(1)(2)	kW	66,40	75,80	85,70	94,60	108,0	121,7	136,3	152,4
EER	(1)(2)	kW/kW	2,940	2,890	2,780	2,660	2,810	2,810	2,670	2,670
ESEER	(1)(2)	kW/kW	4,330	4,080	4,070	3,870	4,010	3,960	3,900	3,830
Cooling energy class			A	A	A	A	A	A	B	B
<b>HEATING ONLY (GROSS VALUE)</b>										
Total heating capacity	(3)	kW	70,87	80,28	90,06	103,0	115,8	131,7	147,5	164,0
Total power input	(3)	kW	24,27	27,82	31,97	37,35	40,38	45,26	52,51	58,92
COP	(3)	kW/kW	2,918	2,888	2,816	2,761	2,866	2,907	2,810	2,784
<b>HEATING ONLY (EN14511 VALUE)</b>										
Total heating capacity	(2)(3)	kW	71,10	80,50	90,30	103,3	116,1	132,0	147,9	164,4
COP	(2)(3)	kW/kW	2,960	2,930	2,850	2,790	2,900	2,940	2,840	2,820
Cooling energy class			B	B	B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>										
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>										
<b>Process refrigeration at high temperature</b>										
Prated,c	(4)	kW	-	-	-	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>										
<b>Process refrigeration at medium temperature</b>										
Prated,c	(5)	kW	-	-	-	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>										
PDesign	(7)	kW	55,1	62,4	69,7	79,4	89,2	101	114	127
SCOP	(7)(8)		3,69	3,55	3,50	3,39	3,52	3,57	3,51	3,43
Performance $\eta_s$	(7)(9)	%	144	139	137	132	138	140	137	134
Seasonal efficiency class	(7)		A+	A+	A+	-	-	-	-	-
<b>EXCHANGERS</b>										
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>										
Water flow	(1)	l/s	3,186	3,635	4,110	4,531	5,178	5,835	6,532	7,301
Pressure drop	(1)	kPa	13,1	13,0	13,8	13,3	13,9	13,5	14,4	15,1
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>										
Water flow	(3)	l/s	3,421	3,875	4,347	4,974	5,589	6,356	7,120	7,918
Pressure drop	(3)	kPa	15,2	14,7	15,4	16,0	16,2	16,1	17,1	17,8
<b>REFRIGERANT CIRCUIT</b>										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1
Refrigerant charge		kg	34,1	29,9	31,1	32,2	37,7	38,9	39,9	49,0
<b>FANS</b>										
Air flow		m³/s	8,06	9,17	9,72	11,11	12,50	13,33	14,44	16,94
Available static pressure		Pa	30	30	30	30	30	30	30	30
<b>NOISE LEVEL</b>										
Sound power level in cooling	(10)(11)(12)	dB(A)	89	84	85	88	86	87	89	93
Sound power level in heating	(10)(12)(13)	dB(A)	76	79	78	79	79	80	81	82
Sound power level in heating	(10)(12)(14)	dB(A)	89	84	85	88	86	87	89	93
<b>SIZE AND WEIGHT</b>										
A	(15)	mm	2980	2980	2980	2980	3970	3970	3970	4670
B	(15)	mm	1260	1260	1260	1260	1260	1260	1260	1260
H	(15)	mm	2100	2100	2100	2100	2100	2100	2100	2100
Operating weight	(15)	kg	1090	1160	1230	1320	1610	1630	1650	1880

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Total sound power of fans, as declared by the maker, at the rated speed of rotation and a useful static head of nominal on the delivery side.
- Sound power level in cooling, outdoors.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in heating, indoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.

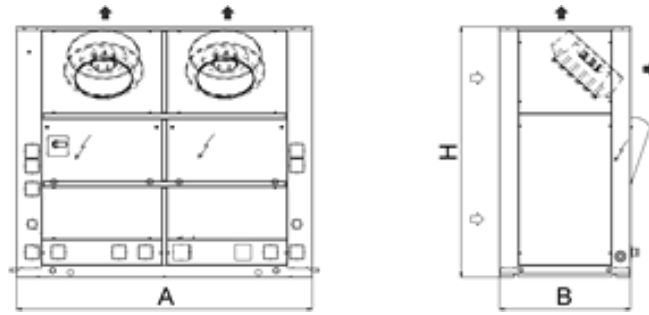
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NX-CN-Y /A		0702	0524	0604	0704	0804	0904	1004
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>								
<b>COOLING ONLY (GROSS VALUE)</b>								
Cooling capacity	(1) kW	173,7	124,8	144,3	169,3	187,2	216,9	238,0
Total power input	(1) kW	64,96	46,32	55,18	62,04	70,82	81,01	91,54
EER	(1) kW/kW	2,672	2,695	2,614	2,731	2,644	2,678	2,601
ESEER	(1) kW/kW	3,950	4,120	4,000	4,210	4,060	4,080	3,990
<b>COOLING ONLY (EN14511 VALUE)</b>								
Cooling capacity	(1)(2) kW	173,3	124,4	143,9	168,8	186,7	216,4	237,4
EER	(1)(2) kW/kW	2,700	2,710	2,630	2,750	2,660	2,690	2,610
ESEER	(1)(2) kW/kW	3,940	4,030	3,920	4,130	3,990	4,010	3,920
Cooling energy class		B	A	B	A	B	B	B
<b>HEATING ONLY (GROSS VALUE)</b>								
Total heating capacity	(3) kW	186,8	134,8	156,8	181,2	199,6	230,8	253,9
Total power input	(3) kW	65,86	47,22	56,14	64,22	71,33	82,01	89,80
COP	(3) kW/kW	2,835	2,856	2,795	2,822	2,799	2,815	2,827
<b>HEATING ONLY (EN14511 VALUE)</b>								
Total heating capacity	(2)(3) kW	187,3	135,2	157,3	181,7	200,2	231,4	254,6
COP	(2)(3) kW/kW	2,870	2,880	2,820	2,860	2,830	2,840	2,850
Cooling energy class		B	B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>								
<b>Process refrigeration at high temperature</b>								
Prated,c	(4) kW	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>								
<b>Process refrigeration at medium temperature</b>								
Prated,c	(5) kW	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>								
PDesign	(7) kW	145	106	124	142	154	180	194
SCOP	(7)(8)	3,52	3,68	3,55	3,60	3,56	3,55	3,59
Performance $\eta_s$	(7)(9) %	138	144	139	141	139	139	141
Seasonal efficiency class	(7)	-	-	-	-	-	-	-
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>								
Water flow	(1) l/s	8,308	5,966	6,903	8,094	8,952	10,37	11,38
Pressure drop	(1) kPa	15,7	19,6	19,7	20,4	19,9	20,4	20,0
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>								
Water flow	(3) l/s	9,019	6,508	7,570	8,749	9,635	11,14	12,26
Pressure drop	(3) kPa	18,4	23,3	23,7	23,8	23,1	23,5	23,2
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	2	4	4	4	4	4	4
No. Circuits	N°	1	2	2	2	2	2	2
Refrigerant charge	kg	56,9	43,0	48,4	64,1	66,3	68,5	71,0
<b>FANS</b>								
Air flow	m³/s	18,61	13,06	15,56	19,72	19,72	21,94	21,94
Available static pressure	Pa	30	30	30	30	30	30	30
<b>NOISE LEVEL</b>								
Sound power level in cooling	(10)(11)(12) dB(A)	95	87	90	88	88	91	91
Sound power level in heating	(10)(12)(13) dB(A)	85	81	85	80	81	88	88
Sound power level in heating	(10)(12)(14) dB(A)	95	87	90	88	88	91	91
<b>SIZE AND WEIGHT</b>								
A	(15) mm	5670	3970	4670	5670	5670	5670	5670
B	(15) mm	1260	1260	1260	1260	1260	1260	1260
H	(15) mm	2100	2100	2100	2100	2100	2100	2100
Operating weight	(15) kg	2120	1610	1840	2310	2460	2550	2610

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
  - Values in compliance with EN14511
  - Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
  - Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
  - Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
  - Seasonal energy efficiency ratio
  - Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
  - Seasonal coefficient of performance
  - Seasonal space heating energy efficiency
  - Total sound power of fans, as declared by the maker, at the rated speed of rotation and a useful static head of nominal on the delivery side.
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  - Sound power level in heating, indoors.
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Certified data in EUROVENT

Dimensional drawing





# i-KI-MTD-Y

0075t - 0151t 21,62-44,39 kW

Air cooled heat pump only heating, with axial fans and inverter driven compressor, for heating water up to 60°C.



The system is based on a packaged external units with integrated hydronic module and an internal unit with the electronic regulation. The heat pump provides chilled and domestic hot water production. Particular care is taken of winter mode, that thanks to the Inverter technology is guaranteed beyond traditional units working limits, water production up to 60°C. The heating only heat pump features high seasonal efficiency in heating, using DC inverter technology to modulate compressor operation and deliver the exact amount of energy based on the actual needs of the installation. The units can be coupled with traditional systems or radiant panels, guaranteeing always a very high energy efficiency. Installation is strongly simplified thanks to the integrated hydronic module.

## Control



### NADISYSTEM

Electronic control that provides great application flexibility and dynamic control of delivery temperature water, optimizing indoor comfort and increasing the energy efficiency. The electronic board allows you to manage:

- Wired remote control, backlit display and with temperature probe and humidity probe
- Outdoor temperature sensor for water plant side modular set point compensation
- A zone of direct heating for radiator, floor heating or fan coil and a zone with mix valve for floor heating
- Electrical heating element for possible integration and anti-legionella cycle for cylinder
- Boiler or electric heater in substitution or in addition
- Up to 6 time bands can be programmed
- Up to 4 heat pump in cascade (with N-CM component)
- Several solutions through appropriate configurations of the controller and use of dedicated extension modules (accessorie), up to 5 zones.

## Refrigerant



## Versions

B Basic

## Features

### WIDE RANGE

Extended capacity range.

### SYSTEM EFFICIENCY

The unit is designed as a system: all components are regulated using proprietary control's logic for the highest efficiency.

### HIGH EFFICIENCY AT PARTIAL LOAD

High seasonal efficiency in both heating and cooling mode, using DC inverter technology to modulate compressor operation and deliver the exact amount of energy based on the actual needs of the installation. High efficiency for low energy consumption during the operating hours.

### HIGH EFFICIENCY COMPONENTS

In terms of improving performance and reducing power consumption, the electronic thermostatic valve is an important component that maximises system efficiency, same for the choice the hydronic kit with inverter water pump (optional) and the modulating the fans speed.

### EXTENSIVE OPERATING LIMITS

Particular care is taken for winter mode, that thanks to inverter technology is guaranteed beyond traditional units working limits, supplying hot water up to 60°C and down to -20°external air.

## Accessories

- Integrated hydronic module with on/off pump or high efficiency inverter pump
- Wired room terminal with backlit display, and with temperature and umidity probe
- Extension module for system configuration
- Three-way valve for domestic hot water
- Electric heater of integration for the heating system
- Electric heater for hot water cylinder, of integration and for anti-legionellosis
- Cascade management kit
- Serial card RS485 for ModBus
- Buffer tank 35,100,200 liters
- Hot water cylinder 300,500 liters
- 300 liters thermal store for domestic hot water, for DOMH2O kit
- 300,500,1000 liters thermal store for domestic hot water with solar heat exchanger, for DOMH2O kit
- DOMH2O15 e DOMH2O24 kit for domestic hot water with external plate heat exchanger and pump
- Copper-Copper heat exchanger coils
- Copper-Aluminum heat exchanger coils with epoxy treatment
- Electric heater for the base and for condensate collecting tray to avoid freezing



## APPLICATION HYDRONIC TERMINAL

<b>i-KI-MTD-Y 0075-0151</b>		<b>0075t</b>	<b>0091t</b>	<b>0095t</b>	<b>0101t</b>	<b>0121t</b>	<b>0135t</b>	<b>0151t</b>
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
<b>HEATING ONLY (GROSS VALUE)</b>								
Total heating capacity	(1) kW	21,62	30,35	32,86	35,63	35,85	39,19	44,39
Total power input	(1) kW	8,297	9,448	10,92	12,33	11,43	13,01	14,67
COP	(1) kW/kW	2,602	3,217	3,018	2,894	3,140	3,015	3,020
<b>HEATING ONLY (EN14511 VALUE)</b>								
Total heating capacity	(1)(2) kW	21,70	30,60	33,10	35,90	36,00	39,40	44,60
COP	(1)(2) kW/kW	2,570	3,180	2,980	2,860	3,110	2,990	2,990
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>								
PDesign	(3) kW	16,0	23,1	25,2	27,4	25,8	28,4	32,4
SCOP	(3)(9)	3,50	3,98	3,93	3,88	4,06	4,06	4,22
Performance $\eta_s$	(3)(10) %	137	156	154	152	159	159	166
Seasonal efficiency class	(11)	A+	A++	A++	A++	A++	A++	A++
PDesign	(4) kW	16,6	22,5	24,7	27,2	25,8	28,7	32,5
SCOP	(4)(9)	2,82	3,21	3,21	3,18	3,27	3,28	3,37
Performance $\eta_s$	(4)(10) %	110	125	125	124	128	128	132
Seasonal efficiency class	(12)	A+	A++	A++	A+	A++	A++	A++
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>								
Water flow	(1) l/s	1,044	1,465	1,586	1,720	1,731	1,892	2,143
Pressure drop	(1) kPa	26,1	30,6	35,9	42,2	19,4	23,2	29,7
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	1	1	1	1	1	1	1
No. Circuits	N°	1	1	1	1	1	1	1
Refrigerant charge	kg	5,90	9,30	9,30	9,30	10,8	10,8	10,8
<b>NOISE LEVEL</b>								
Sound power level in heating	(5)(6) dB(A)	72	73	75	76	77	78	78
Sound Pressure	(7) dB(A)	56	57	59	60	61	62	62
<b>SIZE AND WEIGHT</b>								
A	(8) mm	1470	1470	1470	1470	1720	1720	1720
B	(8) mm	570	570	570	570	670	670	670
H	(8) mm	1200	1700	1700	1700	1700	1700	1700
Operating weight	(8) kg	220	285	285	285	330	330	330

### Notes

- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Values in compliance with EN14511
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in heating, outdoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Energy efficiency class referred to LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]
- Energy efficiency class referred to MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]

The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.

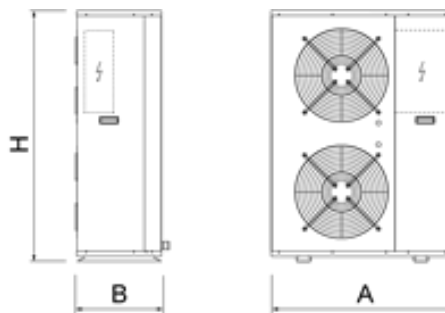
**APPLICATION FLOOR HEATING**

<b>i-KI-MTD-Y 0075-0151</b>		<b>0075t</b>	<b>0091t</b>	<b>0095t</b>	<b>0101t</b>	<b>0121t</b>	<b>0135t</b>	<b>0151t</b>
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
<b>HEATING ONLY (GROSS VALUE)</b>								
Total heating capacity	(1) kW	21,74	30,93	33,27	35,96	36,75	40,06	45,35
Total power input	(1) kW	6,833	7,866	9,073	10,22	9,357	10,72	12,08
COP	(1) kW/kW	3,177	3,926	3,671	3,529	3,932	3,748	3,752
<b>HEATING ONLY (EN14511 VALUE)</b>								
Total heating capacity	(1)(2) kW	21,80	31,10	33,50	36,30	37,00	40,30	45,60
COP	(1)(2) kW/kW	3,130	3,850	3,610	3,470	3,890	3,700	3,700
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>								
PDesign	(3) kW	16,0	23,1	25,2	27,4	25,8	28,4	32,4
SCOP	(3)(9)	3,50	3,98	3,93	3,88	4,06	4,06	4,22
Performance $\eta_s$	(3)(10) %	137	156	154	152	159	159	166
Seasonal efficiency class	(11)	A+	A++	A++	A++	A++	A++	A++
PDesign	(4) kW	16,6	22,5	24,7	27,2	25,8	28,7	32,5
SCOP	(4)(9)	2,82	3,21	3,21	3,18	3,27	3,28	3,37
Performance $\eta_s$	(4)(10) %	110	125	125	124	128	128	132
Seasonal efficiency class	(12)	A+	A++	A++	A+	A++	A++	A++
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>								
Water flow	(1) l/s	1,046	1,488	1,600	1,730	1,768	1,927	2,182
Pressure drop	(1) kPa	26,2	31,6	36,5	42,7	20,3	24,1	30,9
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.	N°	1	1	1	1	1	1	1
No. Circuits	N°	1	1	1	1	1	1	1
Refrigerant charge	kg	5,90	9,30	9,30	9,30	10,8	10,8	10,8
<b>NOISE LEVEL</b>								
Sound power level in heating	(5)(6) dB(A)	72	73	75	76	77	78	78
Sound Pressure	(7) dB(A)	56	57	59	60	61	62	62
<b>SIZE AND WEIGHT</b>								
A	(8) mm	1470	1470	1470	1470	1720	1720	1720
B	(8) mm	570	570	570	570	670	670	670
H	(8) mm	1200	1700	1700	1700	1700	1700	1700
Operating weight	(8) kg	220	285	285	285	330	330	330

**Notes**

- Plant (side) heat exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Values in compliance with EN14511
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
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- Sound power level in heating, outdoors.
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- Unit in standard configuration/execution, without optional accessories.
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
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- Energy efficiency class referred to MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]

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**Dimensional drawing**





# AW-HT-Y

0122 - 0302 38,00-102,0 kW

High efficiency heat pump, air source for outdoor installation, high water temperature



**AW-HT-Y represents the best solution for systems in which there is the need to produce high temperature hot water. The EVI technology compressor with additional steam injection in the compressing cycle assures a water temperature of 65°C and operating limits as low as -20°C. Neither probes nor connections pipes to wells are needed; the installation is simple, this is a suitable solution for all applications.**

## Control



### W3000SE

W3000SE controller dedicated to heat pump applications features a incorporated logic for high temperature hot water production. The keypad features function controls and a complete LCD display for viewing data and activating the unit via a multilevel menu, with settable language. The controller provides temperature control for the heating and cooling systems, as well as for domestic hot water. These different temperatures are managed automatically based on the different conditions in which the system operates, with the possibility to assign specific levels of priority to domestic hot water production, depending on the needs of the application. Diagnostics include complete alarm management, with "black-box" functions (via PC) and alarm log (display or PC) for best analysis of unit behaviour. For multiple units' systems, differentiated device management means just a certain portion of the capacity installed can be dedicated to domestic water production, thus ensuring more efficient energy distribution and simultaneous water delivery to the different distribution systems.

- Built-in clock to create operating profiles up to 4 typical days and 10 time bands, essential for efficient programming of energy production and for managing the Legionella prevention cycles.
- Proprietary self-adaptive logic for defrost involving monitoring of multiple operating and climate parameters. This reduces the number and duration of defrosts, consequently increasing overall energy efficiency.
- Supervision available using proprietary devices or by integration into third party systems using ModBus, BACnet, BACnet-over-IP and Echelon LonWorks protocols.
- Dedicated wall-mounted keypad for remote control of all the functions.

## Refrigerant



## Versions

CA-E	Premium efficiency version: Class A enhanced	LN-CA-E	Premium efficiency version, Class A enhanced, low-noise
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## Configurations

- |                  |   |
|------------------|---|
| - Basic function | D Partial condensing heat recovery function |
|------------------|---|

## Features

### PREMIUM 'CLASS A' EFFICIENCY

The full range is available with a premium efficiency rating, over the Class A (in heating). CA-E and LN-CA-E versions guarantee premium levels of efficiency, making this range the best solution for both cooling and heating process applications.

### MAXIMUM RELIABILITY

Maximum operating reliability, thanks to two main features:

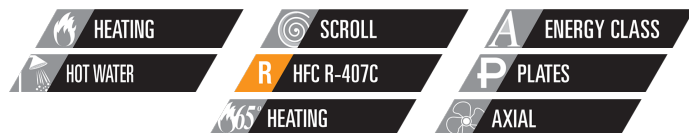
- two independent circuits for all sizes;
- system to prevent formation of ice on the coil, ensuring shorter and more efficient defrost cycles.

### WIDE OPERATING RANGE

Production of high temperature hot water up to 65°C for space heating and sanitary purposes. The unit can operate as standard down to -20°C outdoor temperature.

### MODULAR CONFIGURATION

Modular configuration with capacity extension up to 400kW for medium- and high-capacity installations. Ability of managing different thermal loads according to the requirements of both heating and the domestic hot water systems.



## APPLICATION HYDRONIC TERMINAL

AW-HT-Y / CA-E		0122	0152	0202	0262	0302
Power supply	V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
<b>HEATING ONLY (GROSS VALUE)</b>						
Total heating capacity	(1) kW	38,00	51,30	68,80	84,90	102,0
Total power input	(1) kW	10,70	14,40	19,40	23,60	27,70
COP	(1) kW/kW	3,551	3,562	3,546	3,597	3,682
<b>HEATING ONLY (EN14511 VALUE)</b>						
Total heating capacity	(1)(2) kW	38,10	51,40	69,00	85,20	102,3
COP	(1)(2) kW/kW	3,530	3,540	3,520	3,570	3,650
<b>ENERGY EFFICIENCY</b>						
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>						
PDesign	(3) kW	28,4	33,8	47,5	58,5	70,6
SCOP	(3)(9)	3,12	3,07	3,14	3,20	3,30
Performance $\eta_s$	(3)(10) %	122	120	123	125	129
Seasonal efficiency class	(11)	A	A	A+	A+	-
PDesign	(4) kW	30,5	36,8	50,7	63,3	74,7
SCOP	(4)(9)	2,90	2,90	2,95	3,00	3,07
Performance $\eta_s$	(4)(10) %	113	113	115	117	120
Seasonal efficiency class	(12)	A+	A+	A+	A+	-
<b>EXCHANGERS</b>						
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>						
Water flow	(1) l/s	1,834	2,476	3,321	4,098	4,924
Pressure drop	(1) kPa	10,2	12,9	14,6	18,3	22,9
<b>REFRIGERANT CIRCUIT</b>						
Compressors nr.	N°	2	2	2	2	2
No. Circuits	N°	2	2	2	2	2
Refrigerant charge	kg	13,0	22,0	27,6	35,0	42,0
<b>NOISE LEVEL</b>						
Sound power level in heating	(5)(6) dB(A)	84	86	87	87	87
Sound Pressure	(7) dB(A)	67	69	70	69	69
<b>SIZE AND WEIGHT</b>						
A	(8) mm	1695	2195	2745	2745	2745
B	(8) mm	1120	1120	1120	1120	1120
H	(8) mm	1465	1465	1465	1665	1665
Operating weight	(8) kg	510	750	870	940	1030

### Notes

- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Values in compliance with EN14511
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in heating, outdoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Energy efficiency class referred to LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]
- Energy efficiency class referred to MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]

The units highlighted in this publication contain HFC R407C [GWP<sub>100</sub> 1774] fluorinated greenhouse gases.

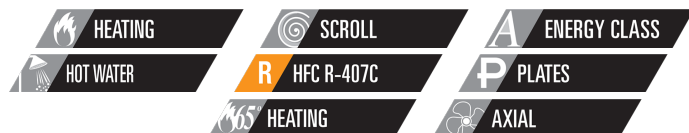
## APPLICATION FLOOR HEATING

AW-HT-Y / CA-E		0122	0152	0202	0262	0302	
Power supply	V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(1)	kW	37,60	50,60	67,90	83,70	100,7
Total power input	(1)	kW	8,900	12,20	16,30	19,90	23,20
COP	(1)	kW/kW	4,225	4,148	4,166	4,206	4,341
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(1)(2)	kW	37,70	50,70	68,10	84,00	101,0
COP	(1)(2)	kW/kW	4,190	4,110	4,130	4,170	4,290
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(3)	kW	28,4	33,8	47,5	58,5	70,6
SCOP	(3)(9)		3,12	3,07	3,14	3,20	3,30
Performance $\eta_s$	(3)(10)	%	122	120	123	125	129
Seasonal efficiency class	(11)		A	A	A+	A+	-
PDesign	(4)	kW	30,5	36,8	50,7	63,3	74,7
SCOP	(4)(9)		2,90	2,90	2,95	3,00	3,07
Performance $\eta_s$	(4)(10)	%	113	113	115	117	120
Seasonal efficiency class	(12)		A+	A+	A+	A+	-
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(1)	l/s	1,809	2,434	3,267	4,027	4,845
Pressure drop	(1)	kPa	9,97	12,4	14,1	17,7	22,2
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.		N°	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2
Refrigerant charge		kg	13,0	22,0	27,6	35,0	42,0
<b>NOISE LEVEL</b>							
Sound power level in heating	(5)(6)	dB(A)	84	86	87	87	87
Sound Pressure	(7)	dB(A)	67	69	70	69	69
<b>SIZE AND WEIGHT</b>							
A	(8)	mm	1695	2195	2745	2745	2745
B	(8)	mm	1120	1120	1120	1120	1120
H	(8)	mm	1465	1465	1465	1665	1665
Operating weight	(8)	kg	510	750	870	940	1030

## Notes

- Plant (side) heat exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
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- Energy efficiency class referred to MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]

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## APPLICATION HYDRONIC TERMINAL

AW-HT-Y / LN-CA-E		0122	0152	0202	0262	0302
Power supply	V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
<b>HEATING ONLY (GROSS VALUE)</b>						
Total heating capacity	(1) kW	38,40	51,00	69,40	85,80	100,3
Total power input	(1) kW	10,70	14,30	19,40	23,70	27,60
COP	(1) kW/kW	3,589	3,566	3,577	3,620	3,634
<b>HEATING ONLY (EN14511 VALUE)</b>						
Total heating capacity	(1)(2) kW	38,50	51,10	69,60	86,10	100,6
COP	(1)(2) kW/kW	3,560	3,540	3,550	3,590	3,600
<b>ENERGY EFFICIENCY</b>						
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>						
PDesign	(3) kW	28,7	34,4	47,8	59,3	70,3
SCOP	(3)(9)	3,15	3,07	3,17	3,23	3,30
Performance $\eta_s$	(3)(10) %	123	120	124	126	129
Seasonal efficiency class	(11)	A+	A	A+	A+	-
PDesign	(4) kW	30,7	37,0	50,9	63,3	75,2
SCOP	(4)(9)	2,92	2,91	2,97	3,00	3,07
Performance $\eta_s$	(4)(10) %	114	113	116	117	120
Seasonal efficiency class	(12)	A+	A+	A+	A+	-
<b>EXCHANGERS</b>						
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>						
Water flow	(1) l/s	1,854	2,462	3,350	4,142	4,842
Pressure drop	(1) kPa	10,5	12,7	14,8	18,7	22,2
<b>REFRIGERANT CIRCUIT</b>						
Compressors nr.	N°	2	2	2	2	2
No. Circuits	N°	2	2	2	2	2
Refrigerant charge	kg	15,0	24,3	33,3	42,1	50,0
<b>NOISE LEVEL</b>						
Sound power level in heating	(5)(6) dB(A)	82	84	85	85	86
Sound Pressure	(7) dB(A)	65	67	68	67	68
<b>SIZE AND WEIGHT</b>						
A	(8) mm	1695	2195	2745	2745	2745
B	(8) mm	1120	1120	1120	1120	1120
H	(8) mm	1465	1465	1465	1665	1665
Operating weight	(8) kg	530	760	910	980	1030

### Notes

- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Values in compliance with EN14511
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## APPLICATION FLOOR HEATING

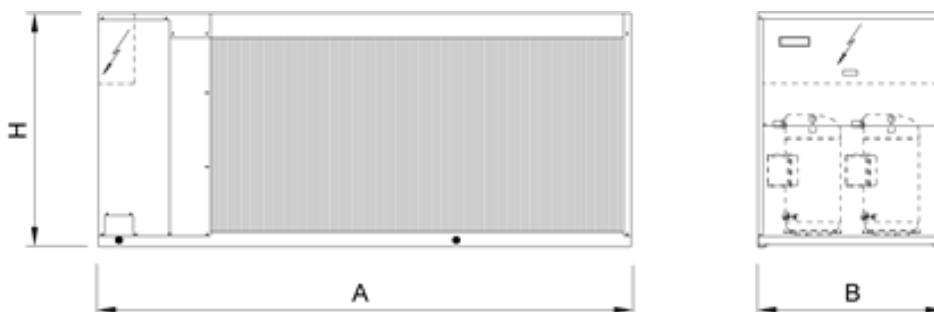
AW-HT-Y / LN-CA-E		0122	0152	0202	0262	0302
Power supply	V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
<b>HEATING ONLY (GROSS VALUE)</b>						
Total heating capacity	(1) kW	38,00	50,20	68,50	84,70	99,00
Total power input	(1) kW	8,900	12,10	16,30	20,00	23,00
COP	(1) kW/kW	4,270	4,149	4,202	4,235	4,304
<b>HEATING ONLY (EN14511 VALUE)</b>						
Total heating capacity	(1)(2) kW	38,10	50,30	68,70	85,00	99,30
COP	(1)(2) kW/kW	4,230	4,110	4,170	4,190	4,260
<b>ENERGY EFFICIENCY</b>						
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>						
PDesign	(3) kW	28,7	34,4	47,8	59,3	70,3
SCOP	(3)(9)	3,15	3,07	3,17	3,23	3,30
Performance $\eta_s$	(3)(10) %	123	120	124	126	129
Seasonal efficiency class	(11)	A+	A	A	A+	-
PDesign	(4) kW	30,7	37,0	50,9	63,3	75,2
SCOP	(4)(9)	2,92	2,91	2,97	3,00	3,07
Performance $\eta_s$	(4)(10) %	114	113	116	117	120
Seasonal efficiency class	(12)	A+	A+	A+	A+	-
<b>EXCHANGERS</b>						
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>						
Water flow	(1) l/s	1,828	2,415	3,296	4,075	4,763
Pressure drop	(1) kPa	10,2	12,2	14,4	18,1	21,5
<b>REFRIGERANT CIRCUIT</b>						
Compressors nr.	N°	2	2	2	2	2
No. Circuits	N°	2	2	2	2	2
Refrigerant charge	kg	15,0	24,3	33,3	42,1	50,0
<b>NOISE LEVEL</b>						
Sound power level in heating	(5)(6) dB(A)	82	84	85	85	86
Sound Pressure	(7) dB(A)	65	67	68	67	68
<b>SIZE AND WEIGHT</b>						
A	(8) mm	1695	2195	2745	2745	2745
B	(8) mm	1120	1120	1120	1120	1120
H	(8) mm	1465	1465	1465	1665	1665
Operating weight	(8) kg	530	760	910	980	1030

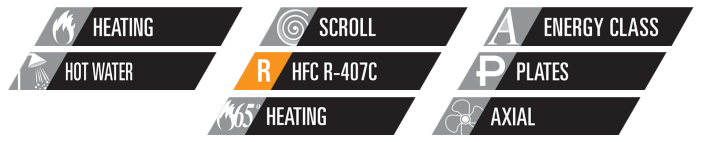
## Notes

- Plant (side) heat exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Values in compliance with EN14511
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
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## Dimensional drawing





# AW-HT-Y

0404 - 0604 134,9-204,8 kW

High efficiency heat pump, air source for outdoor installation, high water temperature



**AW-HT-Y represents the best solution for systems in which there is the need to produce both chilled water and high temperature hot water. The EVI technology compressor with additional steam injection in the compressing cycle assures a water temperature of 65°C and operating limits as low as -20°C. Neither probes nor connections pipes to wells are needed; the installation is simple, this is a suitable solution for all applications.**

## Control



### W3000SE

W3000SE controller dedicated to heat pump applications features a incorporated logic for high temperature hot water production. The keypad features function controls and a complete LCD display for viewing data and activating the unit via a multilevel menu, with settable language. The controller provides temperature control for the heating and cooling systems, as well as for domestic hot water. These different temperatures are managed automatically based on the different conditions in which the system operates, with the possibility to assign specific levels of priority to domestic hot water production, depending on the needs of the application. Diagnostics include complete alarm management, with "black-box" functions (via PC) and alarm log (display or PC) for best analysis of unit behaviour. For multiple units' systems, differentiated device management means just a certain portion of the capacity installed can be dedicated to domestic water production, thus ensuring more efficient energy distribution and simultaneous water delivery to the different distribution systems.

- Built-in clock to create operating profiles up to 4 typical days and 10 time bands, essential for efficient programming of energy production and for managing the Legionella prevention cycles.
- Proprietary self-adaptive logic for defrost involving monitoring of multiple operating and climate parameters. This reduces the number and duration of defrosts, consequently increasing overall energy efficiency.
- Supervision available using proprietary devices or by integration into third party systems using ModBus, BACnet, BACnet-over-IP and Echelon LonWorks protocols.
- Dedicated wall-mounted keypad for remote control of all the functions.

## Refrigerant



## Versions

CA-E	Premium efficiency version: Class A enhanced	LN-CA-E	Premium efficiency version, Class A enhanced, low-noise
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## Configurations

- |                  |   |
|------------------|---|
| - Basic function | D Partial condensing heat recovery function |
|------------------|---|

## Features

### PREMIUM 'CLASS A' EFFICIENCY

The full range is available with a premium efficiency rating, over the Class A (in heating). CA-E and LN-CA-E versions guarantee premium levels of efficiency, making this range the best solution for both cooling and heating process applications.

### WIDE OPERATING RANGE

Production of high temperature hot water up to 65°C for space heating and sanitary purposes. The unit can operate as standard down to -20°C outdoor temperature.

### MAXIMUM RELIABILITY

Maximum operating reliability, thanks to two main features:

- two independent circuits for all sizes;
- system to prevent formation of ice on the coil, ensuring shorter and more efficient defrost cycles.

### MODULAR CONFIGURATION

Modular configuration with capacity extension up to 1000 kW for medium- and high-capacity installations. Ability of managing different thermal loads according to the requirements of both heating and the domestic hot water systems.

## APPLICATION HYDRONIC TERMINAL

AW-HT-Y / CA-E		0404	0524	0604
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50
<b>HEATING ONLY (GROSS VALUE)</b>				
Total heating capacity	(1) kW	134,9	171,0	204,8
Total power input	(1) kW	39,60	48,10	58,90
COP	(1) kW/kW	3,407	3,555	3,477
<b>HEATING ONLY (EN14511 VALUE)</b>				
Total heating capacity	(1)(2) kW	135,4	171,6	205,5
COP	(1)(2) kW/kW	3,380	3,520	3,450
<b>ENERGY EFFICIENCY</b>				
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>				
PDesign	(3) kW	92,6	117	139
SCOP	(3)(9)	3,15	3,32	3,22
Performance $\eta_s$	(3)(10) %	123	130	126
Seasonal efficiency class	(11)	-	-	-
PDesign	(4) kW	98,9	126	148
SCOP	(4)(9)	2,95	3,13	3,02
Performance $\eta_s$	(4)(10) %	115	122	118
Seasonal efficiency class	(12)	-	-	-
<b>EXCHANGERS</b>				
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>				
Water flow	(1) l/s	6,512	8,254	9,886
Pressure drop	(1) kPa	25,4	28,6	31,3
<b>REFRIGERANT CIRCUIT</b>				
Compressors nr.	N°	4	4	4
No. Circuits	N°	2	2	2
Refrigerant charge	kg	66,0	108	108
<b>NOISE LEVEL</b>				
Sound power level in heating	(5)(6) dB(A)	92	93	94
Sound Pressure	(7) dB(A)	73	73	74
<b>SIZE AND WEIGHT</b>				
A	(8) mm	3110	4110	4110
B	(8) mm	2220	2220	2220
H	(8) mm	2150	2150	2150
Operating weight	(8) kg	1950	2400	2530

### Notes

- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
  - Values in compliance with EN14511
  - Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
  - Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
  - Sound power on the basis of measurements made in compliance with ISO 9614.
  - Sound power level in heating, outdoors.
  - Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
  - Unit in standard configuration/execution, without optional accessories.
  - Seasonal coefficient of performance
  - Seasonal space heating energy efficiency
  - Energy efficiency class referred to LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]
  - Energy efficiency class referred to MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]
- The units highlighted in this publication contain HFC R407C [GWP<sub>100</sub> 1774] fluorinated greenhouse gases.



**APPLICATION FLOOR HEATING**

<b>AW-HT-Y / CA-E</b>			<b>0404</b>	<b>0524</b>	<b>0604</b>
Power supply	V/ph/Hz		400/3/50	400/3/50	400/3/50
<b>HEATING ONLY (GROSS VALUE)</b>					
Total heating capacity	(1)	kW	132,9	168,7	202,2
Total power input	(1)	kW	33,50	40,70	49,70
COP	(1)	kW/kW	3,967	4,145	4,068
<b>HEATING ONLY (EN14511 VALUE)</b>					
Total heating capacity	(1)(2)	kW	133,3	169,3	202,9
COP	(1)(2)	kW/kW	3,930	4,100	4,030
<b>ENERGY EFFICIENCY</b>					
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>					
PDesign	(3)	kW	92,6	117	139
SCOP	(3)(9)		3,15	3,32	3,22
Performance $\eta_s$	(3)(10)	%	123	130	126
Seasonal efficiency class	(11)		-	-	-
PDesign	(4)	kW	98,9	126	148
SCOP	(4)(9)		2,95	3,13	3,02
Performance $\eta_s$	(4)(10)	%	115	122	118
Seasonal efficiency class	(12)		-	-	-
<b>EXCHANGERS</b>					
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>					
Water flow	(1)	l/s	6,394	8,116	9,728
Pressure drop	(1)	kPa	24,5	27,7	30,3
<b>REFRIGERANT CIRCUIT</b>					
Compressors nr.		N°	4	4	4
No. Circuits		N°	2	2	2
Refrigerant charge		kg	66,0	108	108
<b>NOISE LEVEL</b>					
Sound power level in heating	(5)(6)	dB(A)	92	93	94
Sound Pressure	(7)	dB(A)	73	73	74
<b>SIZE AND WEIGHT</b>					
A	(8)	mm	3110	4110	4110
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H	(8)	mm	2150	2150	2150
Operating weight	(8)	kg	1950	2400	2530

**Notes**

- Plant (side) heat exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
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- Unit in standard configuration/execution, without optional accessories.
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Energy efficiency class referred to LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]
- Energy efficiency class referred to MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]

The units highlighted in this publication contain HFC R407C [GWP<sub>100</sub> 1774] fluorinated greenhouse gases.

## APPLICATION HYDRONIC TERMINAL

AW-HT-Y / LN-CA-E		0404	0524	0604
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50
<b>HEATING ONLY (GROSS VALUE)</b>				
Total heating capacity	(1) kW	134,9	171,0	204,8
Total power input	(1) kW	39,60	48,10	58,90
COP	(1) kW/kW	3,407	3,555	3,477
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<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>				
PDesign	(3) kW	92,6	117	139
SCOP	(3)(9)	3,15	3,32	3,22
Performance $\eta_s$	(3)(10) %	123	130	126
Seasonal efficiency class	(11)	-	-	-
PDesign	(4) kW	98,9	126	148
SCOP	(4)(9)	2,95	3,13	3,02
Performance $\eta_s$	(4)(10) %	115	122	118
Seasonal efficiency class	(12)	-	-	-
<b>EXCHANGERS</b>				
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>				
Water flow	(1) l/s	6,512	8,254	9,886
Pressure drop	(1) kPa	25,4	28,6	31,3
<b>REFRIGERANT CIRCUIT</b>				
Compressors nr.	N°	4	4	4
No. Circuits	N°	2	2	2
Refrigerant charge	kg	70,0	110	110
<b>NOISE LEVEL</b>				
Sound power level in heating	(5)(6) dB(A)	88	88	89
Sound Pressure	(7) dB(A)	69	68	69
<b>SIZE AND WEIGHT</b>				
A	(8) mm	3110	4110	4110
B	(8) mm	2220	2220	2220
H	(8) mm	2150	2150	2150
Operating weight	(8) kg	1960	2410	2540

### Notes

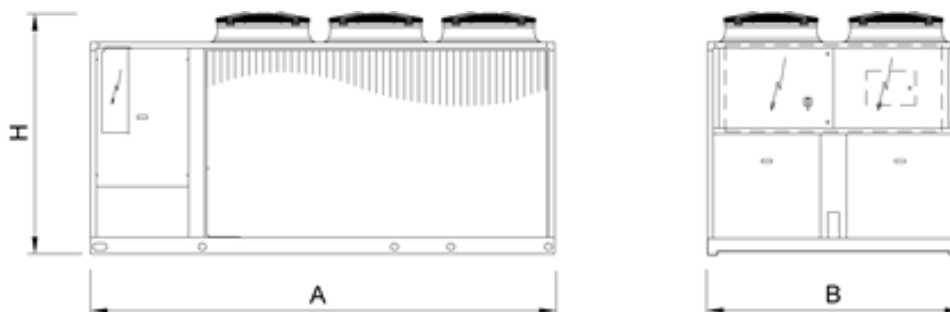
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- The units highlighted in this publication contain HFC R407C [GWP<sub>100</sub> 1774] fluorinated greenhouse gases.

**APPLICATION FLOOR HEATING**

<b>AW-HT-Y / LN-CA-E</b>		<b>0404</b>	<b>0524</b>	<b>0604</b>
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50
<b>HEATING ONLY (GROSS VALUE)</b>				
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Total power input	(1) kW	33,50	40,70	49,70
COP	(1) kW/kW	3,967	4,145	4,068
<b>HEATING ONLY (EN14511 VALUE)</b>				
Total heating capacity	(1)(2) kW	133,3	169,3	202,9
COP	(1)(2) kW/kW	3,930	4,100	4,030
<b>ENERGY EFFICIENCY</b>				
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>				
PDesign	(3) kW	92,6	117	139
SCOP	(3)(9)	3,15	3,32	3,22
Performance $\eta_s$	(3)(10) %	123	130	126
Seasonal efficiency class	(11)	-	-	-
PDesign	(4) kW	98,9	126	148
SCOP	(4)(9)	2,95	3,13	3,02
Performance $\eta_s$	(4)(10) %	115	122	118
Seasonal efficiency class	(12)	-	-	-
<b>EXCHANGERS</b>				
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>				
Water flow	(1) l/s	6,394	8,116	9,728
Pressure drop	(1) kPa	24,5	27,7	30,3
<b>REFRIGERANT CIRCUIT</b>				
Compressors nr.	N°	4	4	4
No. Circuits	N°	2	2	2
Refrigerant charge	kg	70,0	110	110
<b>NOISE LEVEL</b>				
Sound power level in heating	(5)(6) dB(A)	88	88	89
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<b>SIZE AND WEIGHT</b>				
A	(8) mm	3110	4110	4110
B	(8) mm	2220	2220	2220
H	(8) mm	2150	2150	2150
Operating weight	(8) kg	1960	2410	2540

**Notes**

- Plant (side) heat exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
  - Values in compliance with EN14511
  - Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
  - Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
  - Sound power on the basis of measurements made in compliance with ISO 9614.
  - Sound power level in heating, outdoors.
  - Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
  - Unit in standard configuration/execution, without optional accessories.
  - Seasonal coefficient of performance
  - Seasonal space heating energy efficiency
  - Energy efficiency class referred to LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]
  - Energy efficiency class referred to MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]
- The units highlighted in this publication contain HFC R407C [GWP<sub>100</sub> 1774] fluorinated greenhouse gases.

**Dimensional drawing**

 HOT WATER

 SCROLL

 ENERGY CLASS

 R HFC R-407C

 PLATES

 HEATING

 AXIAL

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# WWR MTD2-Y

Reversible heat pump, water source

0011ms - 0121ts 5,200-33,40 kW



The MTD2-Y water-cooled heat pumps are reversible units for heating, cooling and domestic hot water by external three-way valve (accessory). The installation is greatly simplified through the integration of the group simply by connecting the unit the water plant and the electricity so that it can be put into operation.



## Control

### NADISYSTEM

Electronic control Nadisystem provides great application flexibility. The remote keyboard kit wired indoor and outdoor temperature sensors allow dynamic control of delivery temperature water, increasing the energy efficiency. The electronic board allows you to manage:

- wired remote control, backlit display complete with remote temperature and humidity probe
- outdoor temperature sensor for water plant side modular set point compensation
- domestic hot water production by external three-way valve (accessory)
- electrical heating element for possible integration and anti-legionella cycle for cylinder
- boiler or electric heater in substitution or in addition
- the room controller can customise up to six time bands. The presence of the programmable timer allows the creation of an operating profile containing up to 6 time bands.
- up to 4 heat pump in cascade (with N-CM component)
- several solutions through appropriate configurations of the controller and use of dedicated extension modules (accessorie), up to 5 zone.

## Refrigerant



## Versions

- Basic

## Features

- Structure and base in hot-dip galvanised steel with epoxy powder paint finish.
- High efficiency, low pressure drop AISI 316 stainless steel plate heat exchangers, fitted with heating element to provide frost protection.
- Hermetic scroll type compressors, equipped with the crankcase heater and thermal protection
- Case panels are insulated within low noise material for further improvement of silence
- Rubber vibration damper.
- Soft starter for 230V/1/50Hz units (ms)
- Phase sequence control relay for three phase models
- The water circuit comes complete with:
  - Variable flow circulator for 0011+0061 models and centrifugal variable flow pump for 0071 + 0121 models, plant side
  - Modulating valve to reduce water consumption (source side).
  - Safety valve
  - Expansion tank
  - Manual filling assembly
  - Pressure gauge
  - Air vent valve
  - Drain valve on both the plant and the source circuits.
  - Differential pressure switch on source side and system side

## Accessories

- Wired room terminal with backlit display, and with temperature and umidity probe
- Extension module for system configuration
- Three-way valve for domestic hot water
- Electric heater of integration for the heating system
- Electric heater for hot water cylinder, of integration and for anti-legionellosis
- Cascade management kit
- Serial card RS485 for ModBus
- Buffer tank 35,100,200 liters
- Hot water cylinder 300,500 liters
- 300 liters thermal store for domestic hot water, for DOMH2O kit
- 300,500,1000 liters thermal store for domestic hot water with solar heat exchanger, for DOMH2O kit
- DOMH2O15 e DOMH2O24 kit for domestic hot water with external plate heat exchanger and pump

**APPLICATION HYDRONIC TERMINAL**

<b>WWR MTD2-Y</b>		<b>0011ms</b>	<b>0025ms</b>	<b>0031ms</b>	<b>0041ms</b>	<b>0025t</b>	<b>0031t</b>
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1) kW	5,200	7,200	8,800	11,30	7,300	8,900
Total power input	(1) kW	1,500	2,000	2,600	3,200	1,900	2,400
EER	(1) kW/kW	3,467	3,600	3,385	3,531	3,842	3,708
ESEER	(1) kW/kW	3,810	4,210	3,940	3,950	4,540	4,180
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2) kW	5,210	7,210	8,830	11,30	7,310	8,930
EER	(1)(2) kW/kW	3,160	3,360	3,020	3,220	3,570	3,280
ESEER	(1)(2) kW/kW	3,430	3,850	3,420	3,530	4,150	3,610
Cooling energy class		F	F	G	F	E	F
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(3) kW	7,200	9,800	12,20	15,40	9,600	12,10
Total power input	(3) kW	1,700	2,300	3,000	3,600	2,200	2,800
COP	(3) kW/kW	4,235	4,261	4,067	4,278	4,364	4,321
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(3)(2) kW	7,200	9,800	12,20	15,40	9,600	12,10
COP	(3)(2) kW/kW	3,850	3,920	3,600	3,830	4,020	3,780
Cooling energy class		D	D	E	D	C	D
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Process refrigeration at high temperature</b>							
Prated,c	(4) kW	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>							
<b>Process refrigeration at medium temperature</b>							
Prated,c	(5) kW	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(7) kW	8,76	11,5	14,5	18,4	11,9	14,6
SCOP	(7)(8)	4,70	4,86	4,42	4,51	5,20	4,58
Performance ηs	(7)(9) %	180	186	169	172	200	175
Seasonal efficiency class	(7)	A++	A++	A++	A++	A++	A++
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1) l/s	0,249	0,344	0,421	0,540	0,349	0,426
Available unit's head	(1) kPa	61,5	67,1	96,2	91,8	66,7	95,7
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(3) l/s	0,348	0,473	0,589	0,743	0,463	0,584
Available unit's head	(3) kPa	52,2	54,6	77,3	70,8	55,6	77,9
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>							
Water flow	(1) l/s	0,318	0,437	0,541	0,688	0,437	0,537
Pressure drop	(1) kPa	12,3	18,3	27,5	30,8	18,3	27,1
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>							
Water flow	(3) l/s	0,446	0,609	0,747	0,957	0,600	0,754
Pressure drop	(3) kPa	24,2	35,5	52,5	59,5	34,6	53,5
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.	N°	1	1	1	1	1	1
No. Circuits	N°	1	1	1	1	1	1
Refrigerant charge	kg	1,10	1,15	1,24	1,55	1,15	1,24
<b>NOISE LEVEL</b>							
Sound power level in cooling	(10)(11) dB(A)	52	53	53	58	53	53
Sound power level in heating	(10)(12) dB(A)	52	53	53	58	53	53
Sound Pressure	(13) dB(A)	37	38	38	43	38	38
<b>SIZE AND WEIGHT</b>							
A	(14) mm	845	845	845	845	845	845
B	(14) mm	680	680	680	680	680	680
H	(14) mm	1105	1105	1105	1105	1105	1105
Operating weight	(14) kg	188	190	195	210	190	195

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/7°C
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases. Certified data in EUROVENT

## APPLICATION HYDRONIC TERMINAL

WWR MTD2-Y		0041t	0061t	0071t	0091t	0101t	0121t
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1) kW	11,80	15,70	19,80	22,90	26,00	33,40
Total power input	(1) kW	3,200	4,000	5,100	5,800	6,800	8,400
EER	(1) kW/kW	3,688	3,925	3,882	3,948	3,824	3,976
ESEER	(1) kW/kW	4,190	4,330	4,380	4,440	4,310	4,300
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2) kW	11,80	15,70	19,90	23,00	26,20	33,60
EER	(1)(2) kW/kW	3,350	3,640	3,500	3,620	3,460	3,680
ESEER	(1)(2) kW/kW	3,740	3,970	3,870	4,000	3,830	3,920
Cooling energy class		F	E	E	E	E	E
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(3) kW	16,10	21,20	26,20	30,50	34,90	44,00
Total power input	(3) kW	3,700	4,600	5,900	6,500	7,700	9,600
COP	(3) kW/kW	4,351	4,609	4,441	4,692	4,532	4,583
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(3)(2) kW	16,10	21,20	26,10	30,40	34,70	43,80
COP	(3)(2) kW/kW	3,880	4,170	3,910	4,180	3,990	4,130
Cooling energy class		C	B	C	C	C	C
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Process refrigeration at high temperature</b>							
Prated,c	(4) kW	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>							
<b>Process refrigeration at medium temperature</b>							
Prated,c	(5) kW	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(7) kW	19,1	25,4	31,4	36,6	41,8	52,2
SCOP	(7)(8)	4,68	4,88	4,64	4,91	4,74	4,76
Performance ηs	(7)(9) %	179	187	177	188	182	182
Seasonal efficiency class	(7)	A++	A++	A++	A++	A++	A++
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1) l/s	0,564	0,751	0,947	1,095	1,243	1,597
Available unit's head	(1) kPa	89,7	85,0	159	151	184	172
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(3) l/s	0,777	1,023	1,265	1,472	1,685	2,124
Available unit's head	(3) kPa	66,7	59,7	117	105	147	129
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>							
Water flow	(1) l/s	0,712	0,936	1,183	1,364	1,558	1,987
Pressure drop	(1) kPa	32,9	33,5	37,0	31,7	43,2	44,0
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>							
Water flow	(3) l/s	1,006	1,345	1,646	1,944	2,204	2,787
Pressure drop	(3) kPa	65,7	69,1	71,5	64,4	86,5	86,6
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.	N°	1	1	1	1	1	1
No. Circuits	N°	1	1	1	1	1	1
Refrigerant charge	kg	1,55	1,70	2,65	3,10	3,50	3,70
<b>NOISE LEVEL</b>							
Sound power level in cooling	(10)(11) dB(A)	58	59	66	66	70	70
Sound power level in heating	(10)(12) dB(A)	58	59	66	66	70	70
Sound Pressure	(13) dB(A)	43	44	51	51	55	55
<b>SIZE AND WEIGHT</b>							
A	(14) mm	845	845	845	845	845	845
B	(14) mm	680	680	680	680	680	680
H	(14) mm	1105	1105	1105	1105	1105	1105
Operating weight	(14) kg	210	225	230	245	250	270

## Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/7°C
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.

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## APPLICATION FLOOR HEATING

WWR MTD2-Y		0011ms	0025ms	0031ms	0041ms	0025t	0031t
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50	400/3/50
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1)	kW	7,100	9,800	12,00	15,10	12,00
Total power input	(1)	kW	1,600	2,000	2,500	3,300	2,500
EER	(1)	kW/kW	4,438	4,900	4,800	4,576	4,800
ESEER	(1)	kW/kW	3,810	4,210	3,940	3,950	4,180
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2)	kW	7,110	9,800	12,00	15,10	12,00
EER	(1)(2)	kW/kW	4,040	4,500	4,190	4,100	4,190
ESEER	(1)(2)	kW/kW	3,430	3,850	3,420	3,530	3,610
Cooling energy class			F	F	G	F	F
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(3)	kW	7,700	10,20	12,80	16,20	12,80
Total power input	(3)	kW	1,400	1,800	2,300	2,900	2,200
COP	(3)	kW/kW	5,500	5,667	5,565	5,586	5,818
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(3)(2)	kW	7,700	10,20	12,80	16,20	12,80
COP	(3)(2)	kW/kW	4,840	5,050	4,670	4,790	4,830
Cooling energy class			D	D	E	D	D
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Process refrigeration at high temperature</b>							
Prated,c	(4)	kW	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>							
<b>Process refrigeration at medium temperature</b>							
Prated,c	(5)	kW	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(7)	kW	8,76	11,5	14,5	18,4	11,9
SCOP	(7)(8)		4,70	4,86	4,42	4,51	5,20
Performance ηs	(7)(9)	%	180	186	169	172	200
Seasonal efficiency class	(7)		A++	A++	A++	A++	A++
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	0,340	0,470	0,575	0,724	0,575
Available unit's head	(1)	kPa	52,9	54,9	79,0	73,1	56,5
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(3)	l/s	0,370	0,491	0,616	0,779	0,616
Available unit's head	(3)	kPa	49,6	52,6	73,7	66,5	51,4
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	0,414	0,562	0,690	0,876	0,690
Pressure drop	(1)	kPa	20,8	30,3	44,8	49,8	27,8
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>							
Water flow	(3)	l/s	0,509	0,678	0,848	1,074	0,701
Pressure drop	(3)	kPa	31,4	44,1	67,5	74,8	47,2
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.		N°	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	1,10	1,15	1,24	1,55	1,15
<b>NOISE LEVEL</b>							
Sound power level in cooling	(10)(11)	dB(A)	52	53	53	58	53
Sound power level in heating	(10)(12)	dB(A)	52	53	53	58	53
Sound Pressure	(13)	dB(A)	37	38	38	43	38
<b>SIZE AND WEIGHT</b>							
A	(14)	mm	845	845	845	845	845
B	(14)	mm	680	680	680	680	680
H	(14)	mm	1105	1105	1105	1105	1105
Operating weight	(14)	kg	188	190	195	210	190

### Notes

- Plant (side) cooling exchanger water (in/out) 23°C/18°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Plant (side) heating exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger water (in/out) 10°C/7°C
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Unit in standard configuration/execution, without optional accessories.

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## APPLICATION FLOOR HEATING

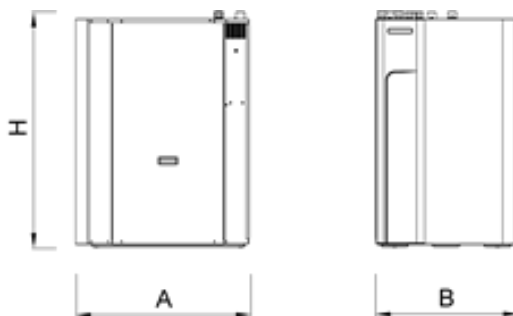
WWR MTD2-Y		0041t	0061t	0071t	0091t	0101t	0121t
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1) kW	15,70	21,30	26,90	30,70	34,80	44,80
Total power input	(1) kW	3,300	4,100	5,200	6,000	7,000	8,800
EER	(1) kW/kW	4,758	5,195	5,173	5,117	4,971	5,091
ESEER	(1) kW/kW	4,190	4,330	4,380	4,440	4,310	4,300
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2) kW	15,70	21,30	27,00	30,80	35,00	45,00
EER	(1)(2) kW/kW	4,250	4,710	4,550	4,590	4,430	4,620
ESEER	(1)(2) kW/kW	3,740	3,970	3,870	4,000	3,830	3,920
Cooling energy class		F	E	E	E	E	E
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(3) kW	16,80	22,40	27,80	32,30	37,00	46,20
Total power input	(3) kW	2,900	3,700	4,700	5,200	6,100	7,700
COP	(3) kW/kW	5,793	6,054	5,915	6,212	6,066	6,000
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(3)(2) kW	16,80	22,40	27,70	32,20	36,80	46,00
COP	(3)(2) kW/kW	4,930	5,240	4,950	5,280	5,080	5,170
Cooling energy class		C	B	C	C	C	C
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Process refrigeration at high temperature</b>							
Prated,c	(4) kW	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>							
<b>Process refrigeration at medium temperature</b>							
Prated,c	(5) kW	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(7) kW	19,1	25,4	31,4	36,6	41,8	52,2
SCOP	(7)(8)	4,68	4,88	4,64	4,91	4,74	4,76
Performance ηs	(7)(9) %	179	187	177	188	182	182
Seasonal efficiency class	(7)	A++	A++	A++	A++	A++	A++
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1) l/s	0,753	1,021	1,290	1,472	1,669	2,148
Available unit's head	(1) kPa	69,7	59,9	113	105	148	127
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(3) l/s	0,808	1,078	1,338	1,554	1,780	2,223
Available unit's head	(3) kPa	62,8	53,8	106	94,2	137	120
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>							
Water flow	(1) l/s	0,905	1,210	1,529	1,748	1,991	2,553
Pressure drop	(1) kPa	53,1	56,0	61,7	52,1	70,5	72,7
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>							
Water flow	(3) l/s	1,121	1,508	1,863	2,184	2,491	3,105
Pressure drop	(3) kPa	81,6	86,9	91,6	81,4	110	107
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.	N°	1	1	1	1	1	1
No. Circuits	N°	1	1	1	1	1	1
Refrigerant charge	kg	1,55	1,70	2,65	3,10	3,50	3,70
<b>NOISE LEVEL</b>							
Sound power level in cooling	(10)(11) dB(A)	58	59	66	66	70	70
Sound power level in heating	(10)(12) dB(A)	58	59	66	66	70	70
Sound Pressure	(13) dB(A)	43	44	51	51	55	55
<b>SIZE AND WEIGHT</b>							
A	(14) mm	845	845	845	845	845	845
B	(14) mm	680	680	680	680	680	680
H	(14) mm	1105	1105	1105	1105	1105	1105
Operating weight	(14) kg	210	225	230	245	250	270

## Notes

- Plant (side) cooling exchanger water (in/out) 23°C/18°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Plant (side) heating exchanger water (in/out) 30°C/35°C; Source (side) heat exchanger water (in/out) 10°C/7°C
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
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- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
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Dimensional drawing





**Water to water indoor unit for the production of chilled/hot water with hermetic rotary Scroll compressors, braze-welded plate-type exchanger and electronic expansion valve. Basement and frame in hot-galvanised shaped sheet steel with a suitable thickness. All parts polyester-powder painted to assure total weather resistance, RAL 7035. The range includes the single-circuit two-compressor versions and the dual circuit four-compressor versions.**

### Control



#### Electronic control W3000TE

The brand new W3000TE controller offers advanced functions and algorithms.

The keypad W3000 Compact, as standard equipment, features function controls and a complete LCD display for viewing data and activating the unit, via a multilevel menu, with settable display language.

The regulation is based on the exclusive QuickMind algorithm, including self-adaptive control logics, beneficial in low water content systems. As alternatives the proportional- or proportional- integral regulations are also available.

Diagnostics include complete alarm management, with "blackbox" functions (via PC) and alarm log (display or PC) for best analysis of unit behaviour. For systems made up of multiple units, differentiated device management means just a certain portion of the capacity installed can be dedicated to domestic water production, in this way ensuring more efficient energy distribution and, at the same time, guaranteeing simultaneous water delivery to the different distribution systems. The built-in clock can be used to create an operating profile containing up to 4 typical days and 10 time bands, essential for efficient programming of energy production.

Supervision is available with different options, using proprietary devices or by integration into third party systems using ModBus, BACnet, BACnet-over-IP and Echelon LonWorks protocols.

A dedicated wall-mounted keypad can be used for remote control of all the functions.

Optionally (VPF package), capacity modulation can be integrated with hydraulic flow modulation, thanks to inverter-driven pumps and to specific resources for the hydraulic circuit.

### Refrigerant



### Versions

- Basic

### Configurations

- Basic function

### Features

#### HIGH EFFICIENCY

Very high efficiency at full and partial load, at the highest market levels, thanks to the adopted technological solutions. These units ensure low operating costs and therefore a quick payback time.

#### ErP READY

The highest level of efficiency at part load can meet and exceed the minimum seasonal efficiency for heating, SCOP (only for reversible units) and for process cooling, SEPR, in accordance with the eco-sustainable design requirements for all products using energy.

#### VARIABLE PRIMARY FLOW (OPTION)

Energy saving due to variable pump speed management based on load demand and the variable flow assures the functioning of the units also with critical working conditions. VPF (Variable Primary Flow) available for sizes 0604-1204.

#### EXTREMELY SILENT OPERATION

Extremely silent operation together with high efficiency, tank to dedicated acoustic devices and a precise design for the choice of the components.

#### INTEGRATED HYDRONIC MODULE

The built-in hydronic module already contains the main water circuit components; it is available as option with single or twin in-line pump, for achieving low head, fixed or variable speed, available for user side and source side (up to 4 pumps).

#### INTEGRATED CONDENSATION'S CONTROL

The electronics of the units manages the most suitable condensing control for each type of application: pressure-controlled valve, two or three-way modulating valv, 0-10V signal for variable speed driven pumps.

#### TOTAL VERSATILITY

The units have been designed with a range of integrated accessories, keeping in mind the operation with open loop (well water or ground water), dry cooler or cooling tower and suitable for geothermal application so as to satisfy all service system and installation requirements.

#### ELECTRONIC EXPANSION VALVE SUPPLIED STANDARD

The use of the electronic expansion valve generates considerable benefits, especially in cases of variable demand and at different working conditions. It guaranteed energy saving due to efficiency optimization in various different working conditions. The electronic thermostatic valve allows you to obtain speed in reaching machine stability and an extension of the operating limits.

### Accessories

- Touch Screen visual display
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Outside air temperature probe for plant water set point compensation.
- Integral acoustical enclosure (type base)
- Thicker soundproofing cladding
- User side and source side hydronic kit available in different configurations
- VPF (Variable Primary Flow) system
- Condensing control device: two or three-way modulating pressure-controlled valve and inverter on pumps

NX-WN-Y		0122	0152	0182	0202	0252	0262	0302	0352	
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	
<b>PERFORMANCE</b>										
<b>COOLING ONLY (GROSS VALUE)</b>										
Cooling capacity	(1)	kW	37,48	46,65	54,98	63,93	70,84	80,47	94,59	108,8
Total power input	(1)	kW	7,728	9,524	11,05	12,87	14,09	16,33	19,25	22,13
EER	(1)	kW/kW	4,851	4,905	4,955	4,953	5,021	4,939	4,927	4,923
ESEER	(1)	kW/kW	6,290	6,450	6,180	6,220	6,460	6,160	6,240	6,380
<b>COOLING ONLY (EN14511 VALUE)</b>										
Cooling capacity	(1)(2)	kW	37,40	46,60	54,80	63,70	70,60	80,30	94,40	108,5
EER	(1)(2)	kW/kW	4,670	4,730	4,780	4,780	4,850	4,780	4,770	4,760
ESEER	(1)(2)	kW/kW	5,800	5,950	5,730	5,780	5,990	5,730	5,830	5,900
Cooling energy class			B	B	B	B	B	B	B	B
<b>HEATING ONLY (GROSS VALUE)</b>										
Total heating capacity	(3)	kW	41,81	52,11	61,18	71,49	78,57	89,53	105,3	120,9
Total power input	(3)	kW	9,692	11,90	13,71	16,04	17,74	20,25	23,69	27,23
COP		kW/kW	4,314	4,378	4,467	4,469	4,441	4,409	4,443	4,445
<b>HEATING ONLY (EN14511 VALUE)</b>										
Total heating capacity	(3)(2)	kW	41,90	52,30	61,40	71,70	78,80	89,80	105,6	121,2
COP	(3)(2)	kW/kW	4,160	4,220	4,320	4,320	4,290	4,280	4,300	4,310
Cooling energy class			B	B	B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>										
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>										
<b>Process refrigeration at high temperature</b>										
Prated,c	(4)	kW	-	-	-	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>										
<b>Process refrigeration at medium temperature</b>										
Prated,c	(5)	kW	-	-	-	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>										
PDesign	(7)	kW	50,4	62,6	73,6	85,6	94,8	108	127	146
SCOP	(7)(9)		5,64	5,95	5,89	5,92	6,07	5,89	5,94	6,00
Performance ηs	(7)(10)	%	218	230	228	229	235	227	230	232
Seasonal efficiency class	(7)		A++	A++	A++	-	-	-	-	-
PDesign	(8)	kW	45,4	56,7	66,4	78,1	85,4	97,0	114	131
SCOP	(8)(9)		4,50	4,58	4,64	4,64	4,67	4,62	4,64	4,69
Performance ηs	(8)(10)	%	172	175	178	178	179	177	178	179
Seasonal efficiency class	(8)		A++	A++	A++	-	-	-	-	-
<b>EXCHANGERS</b>										
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>										
Water flow	(1)	l/s	1,792	2,231	2,629	3,057	3,388	3,848	4,523	5,202
Pressure drop	(1)	kPa	12,3	13,1	13,3	13,7	14,1	14,6	14,7	15,5
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>										
Water flow	(3)	l/s	2,018	2,516	2,953	3,451	3,793	4,322	5,085	5,834
Pressure drop	(3)	kPa	15,6	16,7	16,8	17,5	17,7	18,4	18,6	19,5
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>										
Water flow	(1)	l/s	2,153	2,675	3,145	3,658	4,045	4,610	5,421	6,235
Pressure drop	(1)	kPa	17,7	18,9	19,1	19,7	20,1	21,0	21,1	22,2
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>										
Water flow	(3)	l/s	2,606	3,262	3,848	4,495	4,932	5,617	6,620	7,592
Pressure drop	(3)	kPa	26,0	28,0	28,5	29,7	29,9	31,2	31,5	32,9
<b>REFRIGERANT CIRCUIT</b>										
Compressors nr.		N°	2	2	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1	1	1
Refrigerant charge		kg	3,80	4,20	5,20	5,50	6,70	8,00	9,60	11,0
<b>NOISE LEVEL</b>										
Sound Pressure	(11)	dB(A)	57	57	58	58	58	59	60	60
Sound power level in cooling	(12)(13)	dB(A)	73	73	74	74	74	75	76	77
Sound power level in heating	(12)(14)	dB(A)	74	74	75	75	75	76	77	78
<b>SIZE AND WEIGHT</b>										
A	(15)	mm	1225	1225	1225	1225	1225	1225	1225	1570
B	(15)	mm	885	885	885	885	885	885	885	885
H	(15)	mm	1495	1495	1495	1495	1495	1495	1495	1805
Operating weight	(15)	kg	390	400	430	440	480	500	540	680

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Plant (side) heating exchanger water (in/out) 10°C/7°C; Source (side) heat exchanger water (in/out) 40°C/45°C
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Unit in standard configuration/execution, without optional accessories.

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NX-WN-Y		0402	0452	0502	0552	0602	0702	0802	0604	
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	
<b>PERFORMANCE</b>										
<b>COOLING ONLY (GROSS VALUE)</b>										
Cooling capacity	(1)	kW	123,2	138,5	153,9	176,9	199,7	225,0	251,9	187,2
Total power input	(1)	kW	24,92	28,24	31,51	35,92	40,40	46,17	52,08	39,19
EER	(1)	kW/kW	4,948	4,911	4,886	4,928	4,943	4,870	4,835	4,776
ESEER	(1)	kW/kW	6,130	6,230	6,080	6,220	6,180	6,270	5,990	6,350
<b>COOLING ONLY (EN14511 VALUE)</b>										
Cooling capacity	(1)(2)	kW	122,9	138,2	153,5	176,5	199,2	224,4	251,2	186,8
EER	(1)(2)	kW/kW	4,800	4,770	4,740	4,780	4,790	4,700	4,660	4,660
ESEER	(1)(2)	kW/kW	5,770	5,810	5,710	5,810	5,790	5,790	5,550	5,910
Cooling energy class			B	B	B	B	B	B	B	B
<b>HEATING ONLY (GROSS VALUE)</b>										
Total heating capacity	(3)	kW	136,5	154,0	171,5	196,7	221,6	250,8	281,3	208,4
Total power input	(3)	kW	30,66	34,75	38,77	44,14	49,60	56,35	63,24	47,91
COP		kW/kW	4,446	4,438	4,420	4,460	4,468	4,447	4,451	4,351
<b>HEATING ONLY (EN14511 VALUE)</b>										
Total heating capacity	(3)(2)	kW	136,9	154,4	172,0	197,2	222,2	251,6	282,3	208,9
COP	(3)(2)	kW/kW	4,320	4,310	4,290	4,330	4,330	4,290	4,280	4,250
Cooling energy class			B	B	B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>										
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>										
<b>Process refrigeration at high temperature</b>										
Prated,c	(4)	kW	-	-	-	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>										
<b>Process refrigeration at medium temperature</b>										
Prated,c	(5)	kW	-	-	-	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>										
PDesign	(7)	kW	165	186	207	237	268	302	337	251
SCOP	(7)(9)		5,93	5,97	5,91	5,95	5,96	5,87	5,70	6,05
Performance ηs	(7)(10)	%	229	231	229	230	230	227	220	234
Seasonal efficiency class	(7)		-	-	-	-	-	-	-	-
PDesign	(8)	kW	148	167	186	213	240	272	306	226
SCOP	(8)(9)		4,67	4,70	4,65	4,72	4,70	4,71	4,60	4,71
Performance ηs	(8)(10)	%	179	180	178	181	180	181	176	180
Seasonal efficiency class	(8)		-	-	-	-	-	-	-	-
<b>EXCHANGERS</b>										
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>										
Water flow	(1)	l/s	5,893	6,622	7,359	8,461	9,551	10,76	12,04	8,952
Pressure drop	(1)	kPa	15,7	16,2	16,8	17,9	19,6	24,9	28,6	13,4
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>										
Water flow	(3)	l/s	6,591	7,433	8,280	9,493	10,70	12,11	13,58	10,06
Pressure drop	(3)	kPa	19,6	20,4	21,3	22,5	24,6	31,5	36,3	16,9
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>										
Water flow	(1)	l/s	7,056	7,940	8,829	10,14	11,44	12,91	14,47	10,78
Pressure drop	(1)	kPa	22,5	23,3	24,2	25,7	28,1	35,9	41,3	19,4
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>										
Water flow	(3)	l/s	8,583	9,668	10,76	12,37	13,95	15,77	17,68	13,02
Pressure drop	(3)	kPa	33,3	34,5	36,0	38,2	41,8	53,5	61,6	28,3
<b>REFRIGERANT CIRCUIT</b>										
Compressors nr.		N°	2	2	2	2	2	2	2	4
No. Circuits		N°	1	1	1	1	1	1	1	2
Refrigerant charge		kg	12,5	13,9	14,8	18,1	21,4	21,9	22,0	20,0
<b>NOISE LEVEL</b>										
Sound Pressure	(11)	dB(A)	60	61	61	62	62	65	66	69
Sound power level in cooling	(12)(13)	dB(A)	77	78	78	79	79	82	83	86
Sound power level in heating	(12)(14)	dB(A)	78	79	79	80	80	83	84	87
<b>SIZE AND WEIGHT</b>										
A	(15)	mm	1570	1570	1570	1570	1570	1570	1570	2210
B	(15)	mm	885	885	885	885	885	885	885	885
H	(15)	mm	1805	1805	1805	1805	1805	1805	1805	1805
Operating weight	(15)	kg	760	810	850	890	930	950	970	920

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Plant (side) heating exchanger water (in/out) 10°C/7°C; Source (side) heat exchanger water (in/out) 40°C/45°C
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Unit in standard configuration/execution, without optional accessories.

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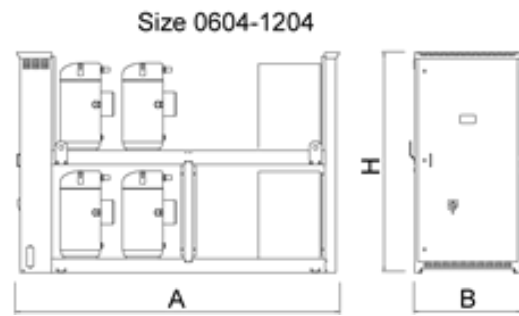
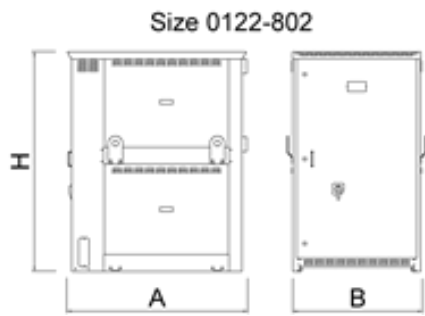
NX-WN-Y		0704	0804	0904	1004	1104	1204
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>							
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1) kW	215,5	244,1	274,7	305,6	351,3	396,2
Total power input	(1) kW	44,95	50,66	57,25	63,76	72,67	81,89
EER	(1) kW/kW	4,789	4,815	4,802	4,790	4,832	4,838
ESEER	(1) kW/kW	6,410	6,330	6,410	6,300	6,390	6,360
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2) kW	215,1	243,6	274,1	304,9	350,5	395,2
EER	(1)(2) kW/kW	4,680	4,700	4,670	4,650	4,690	4,680
ESEER	(1)(2) kW/kW	5,950	5,900	5,900	5,810	5,830	5,780
Cooling energy class		B	B	B	B	B	B
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(3) kW	239,3	270,4	305,1	340,1	389,8	439,1
Total power input	(3) kW	54,99	61,99	70,05	78,01	88,80	99,95
COP	kW/kW	4,351	4,361	4,352	4,360	4,390	4,395
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(3)(2) kW	239,8	271,0	305,9	341,0	390,9	440,4
COP	(3)(2) kW/kW	4,250	4,260	4,240	4,240	4,250	4,240
Cooling energy class		B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Process refrigeration at high temperature</b>							
Prated,c	(4) kW	-	-	-	-	350,5	395,2
SEPR	(4)(6)	-	-	-	-	6,60	6,60
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>							
<b>Process refrigeration at medium temperature</b>							
Prated,c	(5) kW	-	-	-	-	178,5	200,8
SEPR	(5)(6)	-	-	-	-	4,08	4,11
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(7) kW	289	327	368	410	-	-
SCOP	(7)(9)	6,04	6,07	6,02	5,90	-	-
Performance ηs	(7)(10) %	234	235	233	228	-	-
Seasonal efficiency class	(7)	-	-	-	-	-	-
PDesign	(8) kW	259	293	331	369	-	-
SCOP	(8)(9)	4,69	4,76	4,78	4,72	-	-
Performance ηs	(8)(10) %	180	182	183	181	-	-
Seasonal efficiency class	(8)	-	-	-	-	-	-
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1) l/s	10,30	11,67	13,14	14,62	16,80	18,94
Pressure drop	(1) kPa	14,4	15,4	18,9	21,7	24,6	28,8
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(3) l/s	11,55	13,05	14,73	16,42	18,82	21,20
Pressure drop	(3) kPa	18,2	19,3	23,8	27,4	30,8	36,0
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>							
Water flow	(1) l/s	12,40	14,03	15,80	17,59	20,19	22,76
Pressure drop	(1) kPa	20,9	22,3	27,4	31,4	35,5	41,6
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>							
Water flow	(3) l/s	14,95	16,90	19,06	21,25	24,41	27,50
Pressure drop	(3) kPa	30,4	32,4	39,9	45,9	51,9	60,7
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.	N°	4	4	4	4	4	4
No. Circuits	N°	2	2	2	2	2	2
Refrigerant charge	kg	26,0	27,5	33,3	36,2	42,5	48,7
<b>NOISE LEVEL</b>							
Sound Pressure	(11) dB(A)	70	71	72	73	74	74
Sound power level in cooling	(12)(13) dB(A)	87	88	89	90	91	91
Sound power level in heating	(12)(14) dB(A)	88	89	90	91	92	92
<b>SIZE AND WEIGHT</b>							
A	(15) mm	2210	2650	2650	2650	2650	2650
B	(15) mm	885	885	885	885	885	885
H	(15) mm	1805	1805	1805	1805	1805	1805
Operating weight	(15) kg	1100	1300	1450	1530	1630	1740

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Plant (side) heating exchanger water (in/out) 10°C/7°C; Source (side) heat exchanger water (in/out) 40°C/45°C
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Unit in standard configuration/execution, without optional accessories.

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Dimensional drawing







Water cooled optimized heat pumps for heating, high water temperature



**WW-HT represents the best solution for systems in which there is the need to produce high temperature hot water. The special compressor used guarantees hot water production up to 65°C. The unit can completely meet any system and application requirements, with a vast range of models, hydronic configurations and accessories.**

#### Control



#### Electronic control W3000TE

The W3000TE controller is the new device designed especially for heat pump applications with incorporated logic for high and very high temperature hot water production. The keypad features function controls and a complete LCD display for viewing data and activating the unit, via a multilevel menu, with settable display language. The controller provides temperature control for the heating and cooling systems, as well as for domestic hot water. These different temperatures are managed automatically based on the different conditions in which the system operates, with the possibility to assign specific levels of priority to domestic hot water production, depending on the needs of the application. Diagnostics include complete alarm management, with "blackbox" functions (via PC) and alarm log (display or PC) for best analysis of unit behaviour. For systems made up of multiple units, differentiated device management means just a certain portion of the capacity installed can be dedicated to domestic water production, in this way ensuring more efficient energy distribution and, at the same time, guaranteeing simultaneous water delivery to the different distribution systems. The built-in clock can be used to create an operating profile containing up to 4 typical days and 10 time bands, essential for efficient programming of energy production, and fundamental for managing the Legionella prevention cycles.

Supervision is available with different options, using proprietary devices or by integration into third party systems using ModBus, BACnet, BACnet-over-IP and Echelon LonWorks protocols.

A dedicated wall-mounted keypad can be used for remote control of all the functions.

#### Refrigerant



#### Versions

B Basic

#### Configurations

- Basic function

#### Features

##### REFRIGERANT GAS R410A

The use of R410A allowed to achieve better energy efficiencies with environment full respect (ODP = 0)

##### ELECTRONIC EXPANSION VALVE SUPPLIED STANDARD

The use of the electronic expansion valve generates considerable benefits, especially in cases of variable demand and different external conditions. It was introduced into these units as a result of accurate design choices concerning the cooling circuit and the optimisation of operation in various different working conditions

##### EXTENSIVE RANGE OF OPERATION

Production of high temperature hot water up to 65°C for space heating and hot water purposes.

##### STACKABLE UNITS

The special structure of the units (without on-board pumps) is designed to allow two units to be stacked on top of each other without any additional accessories, reducing the space requirements when needing to expand system capacity. The capacity of two heat pumps with the footprint of a single unit.

##### INTEGRATED HYDRONIC MODULE

The units can be supplied with a hydronic kit on the user side and a hydronic kit on the source side. These kits include all the water circuit components so as to optimize installation space, times and costs.

In addition, a vast selection of pumps available, up to 13 different models, for both the user side and the source side, means the best solution can always be configured in terms of flow-rate, available pressure head and power consumption.

##### INTEGRATED CONDENSATION'S CONTROL

The electronics of the units manages the most suitable condensing control for each type of application: two-way modulating valve, inverter control for the pumps.

##### MODULAR CONFIGURATION

Modular configuration with capacity extension up to 400kW for medium- and high-capacity installations. Ability of managing different thermal loads according to the requirements of both heating and the domestic hot water systems.

#### Accessories

- Soft start
- Stackable units
- User side and source side hydronic kit (n°13 single pumps and n°13 twin head-pumps available)
- Water connections can be placed on the right-hand side, top or rear.
- Extra soundproof lining to reduce the noise emissions.
- Outside air temperature probe for plant water set point compensation.
- Three-way valve for domestic hot water
- Set-up for remote connectivity with ModBus/Echelon protocol cards



<b>WW-HT-Y</b>		<b>0071</b>	<b>0091</b>	<b>0101</b>	<b>0121</b>	<b>0131</b>	<b>0151</b>
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>							
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(1) kW	27,52	32,84	37,04	42,58	47,79	54,59
Total power input	(1) kW	6,200	7,331	8,149	9,330	10,39	11,87
COP	kW/kW	4,435	4,475	4,540	4,566	4,596	4,588
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(1)(2) kW	27,60	32,90	37,10	42,70	48,00	54,80
COP	(1)(2) kW/kW	4,210	4,260	4,320	4,340	4,380	4,380
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(3) kW	32,5	38,7	43,9	50,1	56,5	64,7
SCOP	(3)(9)	5,00	4,97	5,16	5,15	5,26	5,18
Performance $\eta_s$	(3)(10) %	192	191	199	198	203	199
Seasonal efficiency class	(11)	A++	A++	A++	A++	A++	A++
PDesign	(4) kW	30,1	36,0	40,4	46,6	52,2	59,6
SCOP	(4)(9)	4,03	4,08	4,15	4,19	4,21	4,19
Performance $\eta_s$	(4)(10) %	153	155	158	160	160	160
Seasonal efficiency class	(12)	A++	A++	A++	A++	A++	A++
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(1) l/s	1,328	1,585	1,788	2,055	2,307	2,635
Pressure drop	(1) kPa	11,2	11,7	13,1	14,0	15,2	16,5
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>							
Water flow	(1) l/s	1,728	2,068	2,341	2,694	3,029	3,460
Pressure drop	(1) kPa	42,2	44,0	43,5	45,8	45,7	44,0
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.	N°	1	1	1	1	1	1
No. Circuits	N°	1	1	1	1	1	1
Refrigerant charge	kg	2,80	3,30	3,70	4,30	4,90	5,50
<b>NOISE LEVEL</b>							
Sound Pressure	(5) dB(A)	51	52	53	54	55	55
Sound power level in heating	(6)(7) dB(A)	66	67	68	69	70	70
<b>SIZE AND WEIGHT</b>							
A	(8) mm	1200	1200	1200	1200	1200	1200
B	(8) mm	600	600	600	600	600	600
H	(8) mm	855	855	855	855	855	855
Operating weight	(8) kg	235	245	250	255	265	275

#### Notes

- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/7°C.
- Values in compliance with EN14511
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in heating, indoors.
- Unit in standard configuration/execution, without optional accessories.
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Energy efficiency class referred to LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]
- Energy efficiency class referred to MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]

The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.

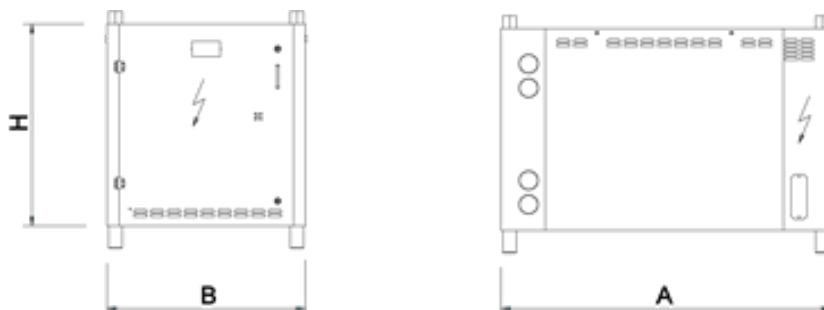
WW-HT-Y			0152	0182	0202	0252	0262	0302
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>								
<b>HEATING ONLY (GROSS VALUE)</b>								
Total heating capacity	(1)	kW	54,98	65,69	74,03	85,26	95,49	109,2
Total power input	(1)	kW	12,38	14,64	16,27	18,70	20,76	23,73
COP		kW/kW	4,435	4,500	4,540	4,561	4,591	4,608
<b>HEATING ONLY (EN14511 VALUE)</b>								
Total heating capacity	(1)(2)	kW	55,20	65,90	74,30	85,70	95,90	109,6
COP	(1)(2)	kW/kW	4,240	4,320	4,340	4,370	4,390	4,410
<b>ENERGY EFFICIENCY</b>								
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>								
PDesign	(3)	kW	65,1	77,4	87,9	101	113	129
SCOP	(3)(9)		5,39	5,41	5,56	5,57	5,67	5,59
Performance $\eta_s$	(3)(10)	%	208	208	214	215	219	216
Seasonal efficiency class	(11)		A++	-	-	-	-	-
PDesign	(4)	kW	60,1	72,0	80,8	93,4	104	119
SCOP	(4)(9)		4,45	4,51	4,59	4,60	4,67	4,64
Performance $\eta_s$	(4)(10)	%	170	172	176	176	179	178
Seasonal efficiency class	(12)		A++	-	-	-	-	-
<b>EXCHANGERS</b>								
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>								
Water flow	(1)	l/s	2,654	3,171	3,574	4,116	4,609	5,271
Pressure drop	(1)	kPa	16,8	20,1	27,9	28,6	29,7	30,6
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>								
Water flow	(1)	l/s	3,454	4,138	4,681	5,393	6,054	6,924
Pressure drop	(1)	kPa	43,8	38,2	41,1	42,4	44,2	45,6
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.		N°	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1
Refrigerant charge		kg	5,70	5,90	6,70	7,80	8,80	10,3
<b>NOISE LEVEL</b>								
Sound Pressure	(5)	dB(A)	56	56	57	57	58	58
Sound power level in heating	(6)(7)	dB(A)	71	71	72	72	73	73
<b>SIZE AND WEIGHT</b>								
A	(8)	mm	1470	1470	1470	1470	1470	1470
B	(8)	mm	885	885	885	885	885	885
H	(8)	mm	900	900	900	900	900	900
Operating weight	(8)	kg	405	435	445	465	475	495

### Notes

- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/7°C.
- Values in compliance with EN14511
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in heating, indoors.
- Unit in standard configuration/execution, without optional accessories.
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Energy efficiency class referred to LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]
- Energy efficiency class referred to MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]

The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.

### Dimensional drawing





# EW-HT-Y

0152 - 0612 70,18-279,2 kW

Water to water heat pumps, heating only, very high temperature water production



**EW-HT-Y represents the best solution for systems where very high temperature water is needed. The special compressor adopted grants hot water production up to 78°C and allows high evaporation temperature (evaporator leaving water temperature up to 40°C). The extraordinary operating limits ensure the perfect integration of the unit in any application, such as 4-pipe systems, industrial process heat recovery or district heating systems.**

## Control



### Electronic control W3000TE

W3000TE Compact control features an easy-to-use interface and a complete LCD display that allows consulting and intervening on the unit by means of a multi-language menu (19 languages are available).

The regulation is based on the patented "Quickmind" water temperature regulation logic uses self-adapting control to maintain flow temperatures and optimise performance even in low water content scenarios. As an alternative, the proportional or proportional-integral regulations are also available.

The diagnostics comprises a complete alarm management system, with the "black-box" (via PC) and the alarm history display (via display or also PC) for enhanced analysis of the unit operation

Optional proprietary devices can perform the adjustment of the resources in systems made of several units. Consumption metering and performance measurement are possible as well. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, LonWorks.

Compatibility with the remote keyboard (up to 8 units).

The programmable timer manages a weekly schedule organised into time bands to optimise unit performance by minimising power consumption during periods of inactivity. Up to 10 daily time bands can be associated with different operating set points.

The defrosting (air source reversible unit only) follows a proprietary self-adaptive logic, which features the monitoring of several operational parameters. This allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.

## Refrigerant



## Versions

B Basic

## Configurations

- Basic function

## Features

### WIDE OPERATING RANGE

Hot water production up to 78°C (evaporator water outlet up to 40°C).

### MAXIMUM RELIABILITY

Unit with two independent refrigerant circuit, designed to ensure maximum efficiency at full load, ensuring uninterrupted operation even in the event of temporary stop of one of the two circuits.

### ELECTRONIC EXPANSION VALVE SUPPLIED STANDARD

The use of the electronic expansion valve generates considerable benefits, especially in cases of variable demand and different external conditions. It was introduced into these units as a result of accurate design choices concerning the cooling circuit and the optimisation of operation in various different working conditions

### COMPACTNESS

Reduced dimensions, for easy installation even in sites with space constraints

## Accessories

- Soft starters
- Thicker soundproofing cladding
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Remote control keyboard (distance to 200m and to 500m)

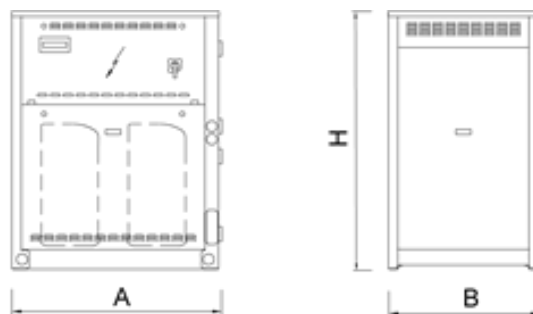
EW-HT-Y		0152	0182	0202	0262	0302	0412	0512	0612
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>									
<b>HEATING ONLY (GROSS VALUE)</b>									
Total heating capacity	(1) kW	70,18	79,27	92,48	112,9	139,4	180,7	224,8	279,2
Total power input	(1) kW	17,00	18,90	22,00	27,90	34,20	43,70	55,10	67,60
COP	(1) kW/kW	4,129	4,196	4,205	4,047	4,076	4,135	4,080	4,130
<b>HEATING ONLY (EN14511 VALUE)</b>									
Total heating capacity	(1)(2) kW	70,40	79,50	92,70	113,2	139,7	181,0	225,2	279,7
COP	(1)(2) kW/kW	4,010	4,070	4,080	3,940	3,980	4,040	4,010	4,060
<b>ENERGY EFFICIENCY</b>									
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>									
PDesign	(3) kW	38,6	43,6	50,0	61,6	78,1	104	128	157
SCOP	(3)(8)	3,27	3,39	3,45	3,30	3,30	3,25	3,27	3,30
Performance $\eta_s$	(3)(9) %	123	128	130	124	124	122	123	124
Seasonal efficiency class	(10)	A+	A++	A++	A+	-	-	-	-
<b>EXCHANGERS</b>									
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>									
Water flow	(1) l/s	2,145	2,423	2,827	3,452	4,262	5,522	6,871	8,535
Pressure drop	(1) kPa	23,9	25,0	24,2	24,2	19,7	19,8	19,8	20,1
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>									
Water flow	(1) l/s	2,616	2,969	3,466	4,185	5,179	6,739	8,351	10,41
Pressure drop	(1) kPa	45,4	46,7	51,8	53,8	49,7	50,1	37,6	37,7
<b>REFRIGERANT CIRCUIT</b>									
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	6,00	7,00	8,10	9,10	9,90	11,0	13,2	14,3
<b>NOISE LEVEL</b>									
Sound Pressure	(4) dB(A)	58	58	58	60	60	62	62	64
Sound power level in heating	(5)(6) dB(A)	74	74	74	76	76	78	78	80
<b>SIZE AND WEIGHT</b>									
A	(7) mm	1223	1223	1223	1223	1223	1223	1223	1223
B	(7) mm	877	877	877	877	877	877	877	877
H	(7) mm	1496	1496	1496	1496	1496	1496	1496	1496
Operating weight	(7) kg	365	380	390	415	430	610	675	740

**Notes**

- 1 Plant (side) heat exchanger water (in/out) 70°C/78°C; Source (side) heat exchanger water (in/out) 45°C/40°C.
- 2 Values in compliance with EN14511
- 3 Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- 4 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- 5 Sound power on the basis of measurements made in compliance with ISO 9614.
- 6 Sound power level in heating, indoors.
- 7 Unit in standard configuration/execution, without optional accessories.
- 8 Seasonal coefficient of performance
- 9 Seasonal space heating energy efficiency
- 10 Energy efficiency class referred to LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]

The units highlighted in this publication contain HFC R134a [GWP<sub>100</sub> 1430] fluorinated greenhouse gases.

**Dimensional drawing**





**Water to water indoor unit for the production of chilled/hot water with hermetic rotary Scroll compressors, braze-welded plate-type exchanger and electronic expansion valve. Basement and frame in hot-galvanised shaped sheet steel with a suitable thickness. All parts polyester-powder painted to assure total weather resistance, RAL 7035. The range includes the single-circuit two-compressor versions and the dual circuit four-compressor versions.**

### Control



#### Electronic control W3000TE

The brand new W3000TE controller offers advanced functions and algorithms.

The keypad W3000 Compact, as standard equipment, features function controls and a complete LCD display for viewing data and activating the unit, via a multilevel menu, with settable display language.

The regulation is based on the exclusive QuickMind algorithm, including self-adaptive control logics, beneficial in low water content systems. As alternatives the proportional- or proportional-integral regulations are also available.

Diagnostics include complete alarm management, with "blackbox" functions (via PC) and alarm log (display or PC) for best analysis of unit behaviour. For systems made up of multiple units, differentiated device management means just a certain portion of the capacity installed can be dedicated to domestic water production, in this way ensuring more efficient energy distribution and, at the same time, guaranteeing simultaneous water delivery to the different distribution systems. The built-in clock can be used to create an operating profile containing up to 4 typical days and 10 time bands, essential for efficient programming of energy production.

Supervision is available with different options, using proprietary devices or by integration into third party systems using ModBus, BACnet, BACnet-over-IP and Echelon LonWorks protocols.

A dedicated wall-mounted keypad can be used for remote control of all the functions.

Optionally (VPF package), capacity modulation can be integrated with hydraulic flow modulation, thanks to inverter-driven pumps and to specific resources for the hydraulic circuit.

### Refrigerant



### Versions

- Basic

### Configurations

- H Function with heat pump, reversible on hydraulic side

### Features

#### HIGH EFFICIENCY

Very high efficiency at full and partial load, at the highest market levels, thanks to the adopted technological solutions. These units ensure low operating costs and therefore a quick payback time.

#### ErP READY

The highest level of efficiency at part load can meet and exceed the minimum seasonal efficiency for heating, SCOP (only for reversible units) and for process cooling, SEPR, in accordance with the eco-sustainable design requirements for all products using energy.

#### VARIABLE PRIMARY FLOW (OPTION)

Energy saving due to variable pump speed management based on load demand and the variable flow assures the functioning of the units also with critical working conditions. VPF (Variable Primary Flow) available for sizes 0604-1204.

#### EXTREMELY SILENT OPERATION

Extremely silent operation together with high efficiency, tank to dedicated acoustic devices and a precise design for the choice of the components.

#### INTEGRATED CONDENSATION'S CONTROL

The electronics of the units manages the most suitable condensing control for each type of application: two or three-way modulating valve and 0-10V signal for variable speed driven pumps.

#### TOTAL VERSATILITY

The units have been designed with a range of integrated accessories, keeping in mind the operation with open loop (well water or ground water), dry cooler or cooling tower and suitable for geothermal application so as to satisfy all service system and installation requirements.

#### ELECTRONIC EXPANSION VALVE SUPPLIED STANDARD

The use of the electronic expansion valve generates considerable benefits, especially in cases of variable demand and at different working conditions. It guaranteed energy saving due to efficiency optimization in various different working conditions. The electronic thermostatic valve allows you to obtain speed in reaching machine stability and an extension of the operating limits.

### Accessories

- Touch Screen visual display
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Outside air temperature probe for plant water set point compensation.
- Integral acoustical enclosure (type base)
- Thicker soundproofing cladding
- VPF (Variable Primary Flow) system
- Condensing control device: two or three-way modulating pressure-controlled valve and inverter on pumps

NX-W-Y /H		0122	0152	0182	0202	0252	0262	0302	0352
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
<b>PERFORMANCE</b>									
<b>COOLING ONLY (GROSS VALUE)</b>									
Cooling capacity	(1) kW	38,14	47,70	56,19	65,31	72,33	82,33	96,67	111,4
Total power input	(1) kW	7,525	9,312	10,84	12,62	13,84	15,99	18,88	21,68
EER	(1) kW/kW	5,060	5,124	5,204	5,183	5,239	5,144	5,116	5,134
ESEER	(1) kW/kW	6,460	6,760	6,420	6,470	6,720	6,410	6,490	6,630
<b>COOLING ONLY (EN14511 VALUE)</b>									
Cooling capacity	(1)(2) kW	37,90	47,50	55,90	65,10	72,00	82,00	96,40	111,0
EER	(1)(2) kW/kW	4,850	4,890	4,960	4,970	5,010	4,960	4,940	4,960
ESEER	(1)(2) kW/kW	5,890	6,100	5,810	5,930	6,120	5,950	6,040	6,130
Cooling energy class		B	B	B	B	B	B	B	B
<b>HEATING ONLY (GROSS VALUE)</b>									
Total heating capacity	(3) kW	42,41	52,95	62,57	72,58	80,09	91,03	107,2	123,1
Total power input	(3) kW	9,438	11,54	13,30	15,55	17,25	19,62	23,14	26,53
COP	kW/kW	4,492	4,609	4,707	4,654	4,657	4,643	4,641	4,645
<b>HEATING ONLY (EN14511 VALUE)</b>									
Total heating capacity	(3)(2) kW	42,50	53,20	62,80	72,80	80,40	91,20	107,4	123,4
COP	(3)(2) kW/kW	4,280	4,360	4,450	4,450	4,440	4,460	4,460	4,470
Cooling energy class		B	B	A	A	A	A	A	A
<b>ENERGY EFFICIENCY</b>									
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>									
<b>Process refrigeration at high temperature</b>									
Prated,c	(4) kW	-	-	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>									
<b>Process refrigeration at medium temperature</b>									
Prated,c	(5) kW	-	-	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>									
PDesign	(7) kW	51,0	63,7	75,5	87,2	96,9	110	129	149
SCOP	(7)(9)	5,89	5,99	5,87	6,02	6,14	6,07	6,09	6,16
Performance ηs	(7)(10)	228	232	227	233	238	235	236	238
Seasonal efficiency class	(7)	A++	A++	A++	-	-	-	-	-
PDesign	(8) kW	46,1	57,5	67,8	79,1	86,9	98,5	116	133
SCOP	(8)(9)	4,62	4,68	4,73	4,78	4,80	4,79	4,80	4,85
Performance ηs	(8)(10)	177	179	181	183	184	184	184	186
Seasonal efficiency class	(8)	A++	A++	A++	-	-	-	-	-
<b>EXCHANGERS</b>									
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>									
Water flow	(1) l/s	1,824	2,281	2,687	3,123	3,459	3,937	4,623	5,326
Pressure drop	(1) kPa	21,6	26,6	26,7	21,8	21,6	21,8	22,7	22,9
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>									
Water flow	(3) l/s	2,672	3,355	3,990	4,619	5,090	5,785	6,806	7,819
Pressure drop	(3) kPa	46,4	57,4	59,0	47,8	46,9	47,1	49,3	49,4
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>									
Water flow	(1) l/s	2,175	2,716	3,194	3,713	4,106	4,684	5,505	6,339
Pressure drop	(1) kPa	11,8	15,7	18,1	20,6	23,1	13,5	14,2	14,6
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>									
Water flow	(3) l/s	2,047	2,556	3,020	3,504	3,866	4,394	5,172	5,940
Pressure drop	(3) kPa	10,4	13,9	16,2	18,3	20,5	11,9	12,5	12,8
<b>REFRIGERANT CIRCUIT</b>									
Compressors nr.	N°	2	2	2	2	2	2	2	2
No. Circuits	N°	1	1	1	1	1	1	1	1
Refrigerant charge	kg	3,80	4,20	5,20	5,50	6,70	8,00	9,60	11,0
<b>NOISE LEVEL</b>									
Sound Pressure	(11) dB(A)	57	57	58	58	58	59	60	60
Sound power level in cooling	(12)(13) dB(A)	73	73	74	74	74	75	76	77
Sound power level in heating	(12)(14) dB(A)	74	74	75	75	75	76	77	78
<b>SIZE AND WEIGHT</b>									
A	(15) mm	1225	1225	1225	1225	1225	1225	1225	1570
B	(15) mm	885	885	885	885	885	885	885	885
H	(15) mm	1495	1495	1495	1495	1495	1495	1495	1805
Operating weight	(15) kg	360	360	390	410	440	480	520	660

### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/7°C
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.  
Certified data in EUROVENT



NX-W-Y /H		0402	0452	0502	0552	0602	0702	0802	0604	
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	
<b>PERFORMANCE</b>										
<b>COOLING ONLY (GROSS VALUE)</b>										
Cooling capacity	(1)	kW	126,1	141,8	157,5	181,1	204,4	230,5	254,3	191,8
Total power input	(1)	kW	24,48	27,68	30,88	35,20	39,59	45,24	51,16	38,29
EER	(1)	kW/kW	5,147	5,119	5,097	5,145	5,162	5,100	4,967	5,008
ESEER	(1)	kW/kW	6,340	6,470	6,320	6,420	6,420	6,500	6,060	6,600
<b>COOLING ONLY (EN14511 VALUE)</b>										
Cooling capacity	(1)(2)	kW	125,7	141,4	157,0	180,6	203,8	229,8	253,4	191,4
EER	(1)(2)	kW/kW	4,990	4,960	4,930	4,990	5,000	4,930	4,790	4,880
ESEER	(1)(2)	kW/kW	5,950	6,040	5,920	6,000	6,010	6,030	5,630	6,140
Cooling energy class			B	B	B	B	B	B	B	B
<b>HEATING ONLY (GROSS VALUE)</b>										
Total heating capacity	(3)	kW	139,0	156,8	174,6	200,2	225,7	255,3	283,3	211,7
Total power input	(3)	kW	29,93	33,85	37,78	43,02	48,35	54,61	61,48	46,86
COP		kW/kW	4,649	4,625	4,619	4,656	4,673	4,676	4,607	4,514
<b>HEATING ONLY (EN14511 VALUE)</b>										
Total heating capacity	(3)(2)	kW	139,3	157,1	175,0	200,6	226,2	255,9	284,0	212,1
COP	(3)(2)	kW/kW	4,480	4,470	4,450	4,490	4,510	4,490	4,400	4,400
Cooling energy class			A	A	A	A	A	A	B	B
<b>ENERGY EFFICIENCY</b>										
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>										
<b>Process refrigeration at high temperature</b>										
Prated,c	(4)	kW	-	-	-	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>										
<b>Process refrigeration at medium temperature</b>										
Prated,c	(5)	kW	-	-	-	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>										
PDesign	(7)	kW	169	190	211	242	273	308	339	255
SCOP	(7)(9)		6,07	6,10	6,01	6,10	6,11	6,07	5,82	6,18
Performance ηs	(7)(10)	%	235	236	232	236	236	235	225	239
Seasonal efficiency class	(7)		-	-	-	-	-	-	-	-
PDesign	(8)	kW	150	170	189	217	244	277	308	229
SCOP	(8)(9)		4,81	4,85	4,80	4,87	4,86	4,90	4,72	4,81
Performance ηs	(8)(10)	%	184	186	184	187	186	188	181	184
Seasonal efficiency class	(8)		-	-	-	-	-	-	-	-
<b>EXCHANGERS</b>										
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>										
Water flow	(1)	l/s	6,030	6,780	7,532	8,659	9,777	11,02	12,16	9,174
Pressure drop	(1)	kPa	23,1	23,8	24,4	24,9	25,5	30,7	37,4	17,1
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>										
Water flow	(3)	l/s	8,832	9,959	11,09	12,73	14,36	16,25	17,97	13,36
Pressure drop	(3)	kPa	49,6	51,4	52,9	53,8	55,1	66,7	81,6	36,3
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>										
Water flow	(1)	l/s	7,174	8,074	8,974	10,30	11,63	13,14	14,55	10,96
Pressure drop	(1)	kPa	15,4	15,9	18,5	18,3	21,0	23,5	28,8	16,2
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>										
Water flow	(3)	l/s	6,708	7,569	8,430	9,665	10,90	12,32	13,68	10,22
Pressure drop	(3)	kPa	13,5	14,0	16,3	16,1	18,5	20,7	25,4	14,1
<b>REFRIGERANT CIRCUIT</b>										
Compressors nr.		N°	2	2	2	2	2	2	2	4
No. Circuits		N°	1	1	1	1	1	1	1	2
Refrigerant charge		kg	12,5	13,9	14,8	18,1	21,4	21,9	22,0	19,3
<b>NOISE LEVEL</b>										
Sound Pressure	(11)	dB(A)	60	61	61	62	62	65	66	69
Sound power level in cooling	(12)(13)	dB(A)	77	78	78	79	79	82	83	86
Sound power level in heating	(12)(14)	dB(A)	78	79	79	80	80	83	84	87
<b>SIZE AND WEIGHT</b>										
A	(15)	mm	1570	1570	1570	1570	1570	1570	1570	2210
B	(15)	mm	885	885	885	885	885	885	885	885
H	(15)	mm	1805	1805	1805	1805	1805	1805	1805	1805
Operating weight	(15)	kg	740	790	820	870	920	940	960	870

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/7°C
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.  
Certified data in EUROVENT

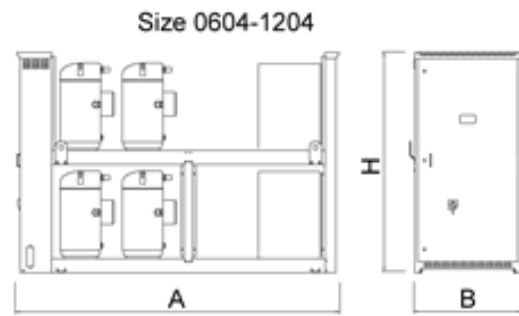
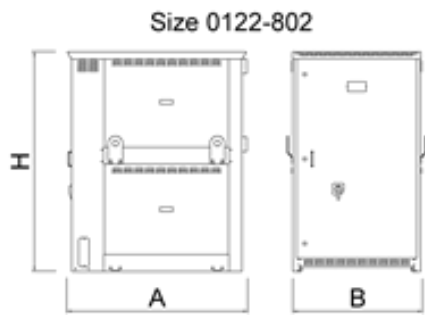
NX-W-Y /H		0704	0804	0904	1004	1104	1204
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>							
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1) kW	221,0	250,0	281,3	312,7	359,3	397,8
Total power input	(1) kW	43,95	49,61	56,09	62,55	71,34	79,96
EER	(1) kW/kW	5,034	5,040	5,014	5,003	5,039	4,972
ESEER	(1) kW/kW	6,640	6,580	6,640	6,530	6,610	6,570
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2) kW	220,5	249,4	280,6	311,9	358,4	396,6
EER	(1)(2) kW/kW	4,910	4,910	4,880	4,860	4,880	4,800
ESEER	(1)(2) kW/kW	6,160	6,120	6,130	6,020	6,030	5,960
Cooling energy class		B	B	B	B	B	B
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(3) kW	243,1	274,5	309,4	345,1	395,5	440,3
Total power input	(3) kW	53,75	60,65	68,25	76,49	87,15	98,14
COP	kW/kW	4,519	4,530	4,537	4,511	4,541	4,488
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(3)(2) kW	243,6	275,1	310,1	345,9	396,5	441,5
COP	(3)(2) kW/kW	4,410	4,410	4,400	4,370	4,390	4,310
Cooling energy class		B	B	B	B	B	B
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Process refrigeration at high temperature</b>							
Prated,c	(4) kW	-	-	-	-	358,4	396,6
SEPR	(4)(6)	-	-	-	-	6,82	6,76
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>							
<b>Process refrigeration at medium temperature</b>							
Prated,c	(5) kW	-	-	-	-	181,2	201,5
SEPR	(5)(6)	-	-	-	-	4,19	4,20
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(7) kW	294	332	371	416	-	-
SCOP	(7)(9)	6,17	6,17	6,27	6,05	-	-
Performance ηs	(7)(10) %	239	239	243	234	-	-
Seasonal efficiency class	(7)	-	-	-	-	-	-
PDesign	(8) kW	263	297	335	374	-	-
SCOP	(8)(9)	4,83	4,90	4,93	4,85	-	-
Performance ηs	(8)(10) %	185	188	189	186	-	-
Seasonal efficiency class	(8)	-	-	-	-	-	-
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1) l/s	10,57	11,96	13,45	14,95	17,18	19,02
Pressure drop	(1) kPa	18,1	20,0	21,3	24,9	28,2	34,6
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(3) l/s	15,34	17,33	19,54	21,77	24,99	27,73
Pressure drop	(3) kPa	38,1	42,0	45,0	52,7	59,7	73,6
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>							
Water flow	(1) l/s	12,62	14,27	16,07	17,87	20,51	22,75
Pressure drop	(1) kPa	17,4	19,6	22,0	24,8	30,0	36,1
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>							
Water flow	(3) l/s	11,73	13,25	14,93	16,66	19,09	21,25
Pressure drop	(3) kPa	15,1	16,9	19,0	21,6	26,0	31,5
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.	N°	4	4	4	4	4	4
No. Circuits	N°	2	2	2	2	2	2
Refrigerant charge	kg	23,1	25,5	29,9	37,7	44,5	44,6
<b>NOISE LEVEL</b>							
Sound Pressure	(11) dB(A)	70	71	72	73	74	74
Sound power level in cooling	(12)(13) dB(A)	87	88	89	90	91	91
Sound power level in heating	(12)(14) dB(A)	88	89	90	91	92	92
<b>SIZE AND WEIGHT</b>							
A	(15) mm	2210	2650	2650	2650	2650	2650
B	(15) mm	885	885	885	885	885	885
H	(15) mm	1805	1805	1805	1805	1805	1805
Operating weight	(15) kg	1050	1240	1330	1530	1630	1710

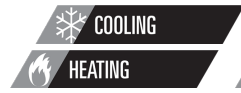
#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/7°C
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

Dimensional drawing





# FOCS-W-Y /H

0401 - 1302 86,96-297,9 kW

Water to water heat pump, reversible on hydraulic side



Indoor unit for the production of chilled/hot water with semi-hermetic screw compressors optimized for R134a, thermostatic expansion valve, shell and tube condenser and evaporator.

Base and supporting structure and panels are of galvanized epoxy powder coated steel with increased thickness.

Flexible and reliable unit; it easily adapts itself to different thermal load conditions thanks to the precise thermoregulation. The high performance's level is achieved thanks to the accurate sizing of all internal components.

## Control



### W3000TE

W3000TE features a large keyboard and wide LCD display for an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements. Complete alarm management system is available, with the "black-box" and the alarm history display functions. For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices. Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks.

Compatibility with remote keyboard (up to 8 units). The programmable timer allows the creation of an operating profile up to 4 typical days and 10 time bands. Continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

## Refrigerant



## Versions

B Basic

## Configurations

H Function with heat pump, reversible on hydraulic side

## Features

### FLEXIBILITY

Flexibility in applications thanks to the many available functions and versions

### ADAPTABILITY

Adaptability at the building's cooling request thanks to the continuous capacity regulation, assured by sophisticated control's logic.

## Accessories

- Compressor power factor correction
- Electronic expansion valve
- Pressostatic control valve
- Remote control keyboard (distance to 200m and to 500m)
- Set-up for remote connectivity with ModBus, Echelon LonTalk, Bacnet protocol board

FOCS-W-Y / B / H		0401	0501	0551	0651	0751	0802
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>							
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1) kW	86,96	106,6	130,2	147,4	164,6	177,5
Total power input	(1) kW	19,58	24,49	28,12	32,70	36,89	39,33
EER	(1) kW/kW	4,439	4,351	4,633	4,508	4,461	4,517
ESEER	(1) kW/kW	5,150	5,320	5,250	5,290	5,400	5,390
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2) kW	86,70	106,3	129,9	147,0	164,1	177,1
EER	(1)(2) kW/kW	4,270	4,170	4,460	4,340	4,290	4,350
ESEER	(1)(2) kW/kW	4,490	4,330	4,930	4,530	4,460	4,560
Cooling energy class		C	D	G	C	C	C
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(3) kW	99,51	122,7	147,6	168,0	188,6	202,2
Total power input	(3) kW	23,49	29,23	34,15	39,23	44,00	47,14
COP	kW/kW	4,234	4,202	4,316	4,286	4,286	4,293
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(3)(2) kW	99,90	123,3	148,2	168,7	189,4	203,1
COP	(3)(2) kW/kW	4,080	4,040	4,180	4,140	4,130	4,150
Cooling energy class		C	C	G	C	C	C
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Process refrigeration at high temperature</b>							
Prated,c	(4) kW	-	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>							
<b>Process refrigeration at medium temperature</b>							
Prated,c	(5) kW	-	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(7) kW	120	148	179	203	227	245
SCOP	(7)(9)	5,33	5,41	5,53	5,46	5,50	5,48
Performance ηs	(7)(10) %	205	208	213	210	212	211
Seasonal efficiency class	(7)	-	-	-	-	-	-
PDesign	(8) kW	107	133	159	180	204	217
SCOP	(8)(9)	4,01	4,23	3,93	4,07	4,26	4,18
Performance ηs	(8)(10) %	152	161	149	155	162	159
Seasonal efficiency class	(8)	-	-	-	-	-	-
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1) l/s	4,159	5,100	6,228	7,047	7,871	8,489
Pressure drop	(1) kPa	17,7	17,5	14,1	18,1	22,6	17,6
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(3) l/s	6,170	7,588	9,204	10,45	11,73	12,58
Pressure drop	(3) kPa	39,0	38,8	30,9	39,7	50,1	38,6
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>							
Water flow	(1) l/s	5,069	6,238	7,537	8,569	9,587	10,32
Pressure drop	(1) kPa	32,6	52,5	43,1	44,0	44,7	51,8
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>							
Water flow	(3) l/s	4,804	5,923	7,125	8,109	9,103	9,759
Pressure drop	(3) kPa	29,3	47,3	38,6	39,4	40,3	46,3
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.	N°	1	1	1	1	1	2
No. Circuits	N°	1	1	0	1	1	2
Refrigerant charge	kg	18,5	21,0	31,0	29,9	28,9	41,9
<b>NOISE LEVEL</b>							
Sound Pressure	(11) dB(A)	74	75	77	77	77	76
Sound power level in cooling	(12)(13) dB(A)	91	92	94	94	94	94
Sound power level in heating	(12)(14) dB(A)	91	92	94	94	94	94
<b>SIZE AND WEIGHT</b>							
A	(15) mm	2300	2500	2500	2500	2500	3200
B	(15) mm	1000	1000	1000	1000	1000	1200
H	(15) mm	1500	1500	1500	1500	1500	1500
Operating weight	(15) kg	800	840	1160	1180	1190	1470

- Notes**
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  - Values in compliance with EN14511
  - Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/7°C
  - Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
  - Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
  - Seasonal energy efficiency ratio
  - Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
  - Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
  - Seasonal coefficient of performance
  - Seasonal space heating energy efficiency
  - Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
  - Sound power on the basis of measurements made in compliance with ISO 9614.
  - Sound power level in cooling, indoors.
  - Sound power level in heating, indoors.
  - Unit in standard configuration/execution, without optional accessories.
- The units highlighted in this publication contain HFC R134a [GWP<sub>100</sub> 1430] fluorinated greenhouse gases.  
 Certified data in EUROVENT

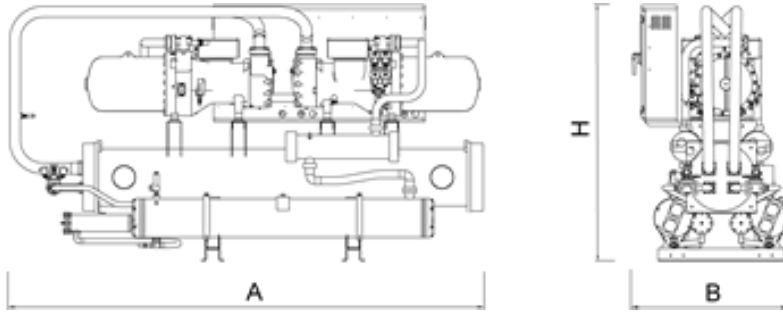
<b>FOCS-W-Y / B / H</b>		<b>0851</b>	<b>0951</b>	<b>1002</b>	<b>1102</b>	<b>1302</b>
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>						
<b>COOLING ONLY (GROSS VALUE)</b>						
Cooling capacity	(1) kW	197,7	221,1	217,0	250,7	297,9
Total power input	(1) kW	42,74	49,61	49,20	55,79	65,56
EER	(1) kW/kW	4,630	4,458	4,411	4,493	4,541
ESEER	(1) kW/kW	5,540	5,420	5,520	5,240	5,490
<b>COOLING ONLY (EN14511 VALUE)</b>						
Cooling capacity	(1)(2) kW	197,2	220,2	216,2	249,6	296,7
EER	(1)(2) kW/kW	4,450	4,280	4,210	4,300	4,350
ESEER	(1)(2) kW/kW	4,660	4,450	4,380	4,530	4,560
Cooling energy class		C	C	D	C	C
<b>HEATING ONLY (GROSS VALUE)</b>						
Total heating capacity	(3) kW	223,4	252,3	248,7	286,7	338,8
Total power input	(3) kW	51,23	59,07	58,66	67,87	78,62
COP	kW/kW	4,363	4,269	4,237	4,222	4,310
<b>HEATING ONLY (EN14511 VALUE)</b>						
Total heating capacity	(3)(2) kW	224,3	253,2	249,8	287,6	340,0
COP	(3)(2) kW/kW	4,210	4,070	4,040	4,000	4,100
Cooling energy class		C	C	C	C	C
<b>ENERGY EFFICIENCY</b>						
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>						
<b>Process refrigeration at high temperature</b>						
Prated,c	(4) kW	-	-	-	-	-
SEPR	(4)(6)	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>						
<b>Process refrigeration at medium temperature</b>						
Prated,c	(5) kW	-	-	-	-	-
SEPR	(5)(6)	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>						
PDesign	(7) kW	272	305	300	346	410
SCOP	(7)(9)	5,64	5,36	5,26	5,02	5,22
Performance ηs	(7)(10) %	218	206	202	193	201
Seasonal efficiency class	(7)	-	-	-	-	-
PDesign	(8) kW	239	272	269	311	363
SCOP	(8)(9)	4,24	4,25	4,27	3,83	4,11
Performance ηs	(8)(10) %	161	162	163	145	156
Seasonal efficiency class	(8)	-	-	-	-	-
<b>EXCHANGERS</b>						
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>						
Water flow	(1) l/s	9,455	10,57	10,38	11,99	14,25
Pressure drop	(1) kPa	21,8	41,3	39,8	53,1	46,0
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>						
Water flow	(3) l/s	13,96	15,68	15,42	17,77	21,11
Pressure drop	(3) kPa	47,5	90,8	87,8	117	101
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>						
Water flow	(1) l/s	11,45	12,88	12,67	14,59	17,30
Pressure drop	(1) kPa	52,5	38,7	54,1	40,5	45,0
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>						
Water flow	(3) l/s	10,78	12,18	12,00	13,84	16,35
Pressure drop	(3) kPa	46,6	34,6	48,6	36,5	40,2
<b>REFRIGERANT CIRCUIT</b>						
Compressors nr.	N°	1	1	2	2	2
No. Circuits	N°	1	1	2	2	2
Refrigerant charge	kg	35,6	50,6	42,6	51,0	53,7
<b>NOISE LEVEL</b>						
Sound Pressure	(11) dB(A)	76	76	77	79	79
Sound power level in cooling	(12)(13) dB(A)	94	94	95	97	97
Sound power level in heating	(12)(14) dB(A)	94	94	95	97	97
<b>SIZE AND WEIGHT</b>						
A	(15) mm	3200	3200	3200	3200	3500
B	(15) mm	1000	1000	1200	1200	1200
H	(15) mm	1500	1500	1500	1500	1800
Operating weight	(15) kg	1270	1350	1490	1930	2220

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/7°C
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Unit in standard configuration/execution, without optional accessories.

The units highlighted in this publication contain HFC R134a [GWP<sub>100</sub> 1430] fluorinated greenhouse gases.  
Certified data in EUROVENT

**Dimensional drawing**





# FOCS2-W-Y /H

1301 - 9604 306,0-2416 kW

Water to water high efficiency heat pump, reversible on hydraulic side



**Unit for indoor installation for chilled/hot water production. Semihermetic screw compressors optimized to operate with low compression ratio and R134a; shell and tubes condenser and direct expansion evaporator; electronic expansion valve. Frame in polyester-painted galvanized steel. High efficiency unit: the innovative optimized compressors and the high performing heat exchangers enhance EER values up to 5,1 (CA version) and even up to 5,6 (CA-E version) at Eurovent standards conditions.**

## Control



### W3000TE

W3000TE features a large keyboard and wide LCD display for an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements. Complete alarm management system is available, with the "black-box" and the alarm history display functions. For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices. Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks.

Compatibility with remote keyboard (up to 8 units). The programmable timer allows the creation of an operating profile up to 4 typical days and 10 time bands. Continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

## Refrigerant



## Versions

CA High efficiency version CA-E Premium efficiency version: Class A enhanced

## Configurations

H Function with heat pump, reversible on hydraulic side

## Features

### HIGH EFFICIENCY

The version 'CA-E' is characterized by efficiency beyond the 'Class A' for Eurovent. The technological choices adopted assure the minimization of operating costs and therefore a quick payback time.

### ADAPTABILITY

Adaptability at the building's heating request thanks to the continuous capacity regulation, assured by sophisticated control's logic.

### SILENT OPERATION

Extremely silent operation thanks to the accurate unit's design. Optional integral acoustic enclosure, reduces more the sound level beyond the best on market

## Accessories

- Kit HWT, High Water Temperature, to produce hot water up to 60°C
- VPF (Variable Primary Flow) system
- Integral acoustical enclosure (type base or plus)
- Set-up for remote connectivity with ModBus/Echelon protocol cards

FOCS2-W-Y /CA / H			1301	1401	1601	1801	2101
Power supply	V/ph/Hz		400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>							
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1)	kW	306,0	348,3	421,8	477,4	537,7
Total power input	(1)	kW	60,47	68,70	83,36	94,38	106,0
EER	(1)	kW/kW	5,058	5,070	5,058	5,057	5,073
ESEER	(1)	kW/kW	5,940	5,950	5,730	5,840	5,940
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2)	kW	304,9	347,0	420,0	475,8	535,8
EER	(1)(2)	kW/kW	4,860	4,870	4,850	4,870	4,890
ESEER	(1)(2)	kW/kW	5,450	5,450	5,250	5,410	5,500
Cooling energy class			B	B	B	B	B
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(3)	kW	343,5	391,6	468,7	530,9	607,3
Total power input	(3)	kW	76,72	87,23	104,2	118,0	132,7
COP		kW/kW	4,478	4,491	4,498	4,499	4,576
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(2)(3)	kW	344,5	392,7	469,9	532,3	608,9
COP	(2)(3)	kW/kW	4,320	4,320	4,310	4,340	4,370
Cooling energy class			B	B	B	B	B
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Process refrigeration at high temperature</b>							
Prated,c	(4)	kW	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>							
<b>Process refrigeration at medium temperature</b>							
Prated,c	(5)	kW	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(7)	kW	-	-	-	-	-
SCOP	(7)(8)		-	-	-	-	-
Performance $\eta_s$	(7)(9)	%	-	-	-	-	-
Seasonal efficiency class	(7)		-	-	-	-	-
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	14,64	16,66	20,17	22,83	25,71
Pressure drop	(1)	kPa	41,9	45,0	52,7	41,7	44,2
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(3)	l/s	18,89	21,94	26,39	30,00	37,78
Pressure drop	(3)	kPa	69,8	78,0	90,3	72,0	95,4
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	17,46	19,87	24,07	27,24	30,67
Pressure drop	(1)	kPa	35,9	35,0	34,8	34,6	34,5
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>							
Water flow	(3)	l/s	16,58	18,90	22,63	25,63	29,32
Pressure drop	(3)	kPa	32,4	31,7	30,7	30,6	31,5
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.		N°	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	42,0	43,0	62,0	62,0	65,0
<b>NOISE LEVEL</b>							
Sound Pressure	(10)	dB(A)	79	79	79	79	79
Sound power level in cooling	(11)(12)	dB(A)	97	97	97	97	97
Sound power level in heating	(11)(13)	dB(A)	0	0	0	0	0
<b>SIZE AND WEIGHT</b>							
A	(14)	mm	3830	3830	3860	3860	3860
B	(14)	mm	900	900	900	900	900
H	(14)	mm	1700	1700	1840	1840	1840
Operating weight	(14)	kg	2050	2110	2590	2810	2910

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/6,57°C
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

FOCS2-W-Y /CA / H			2401	8103	9003	9004	9604
Power supply	V/ph/Hz		400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>							
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1)	kW	606,8	2024	2236	2278	2416
Total power input	(1)	kW	119,7	400,4	442,0	450,7	478,2
EER	(1)	kW/kW	5,069	5,055	5,059	5,054	5,052
ESEER	(1)	kW/kW	5,920	6,090	6,140	6,240	6,170
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2)	kW	604,2	2018	2228	2273	2410
EER	(1)(2)	kW/kW	4,860	4,900	4,890	4,920	4,910
ESEER	(1)(2)	kW/kW	5,420	5,610	5,600	5,800	5,710
Cooling energy class			B	B	B	B	B
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(3)	kW	678,8	2226	2434	2582	2739
Total power input	(3)	kW	149,4	494,7	544,4	563,9	598,6
COP		kW/kW	4,544	4,500	4,471	4,579	4,576
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(2)(3)	kW	680,6	2231	2439	2588	2745
COP	(2)(3)	kW/kW	4,360	4,390	4,370	4,430	4,420
Cooling energy class			B	B	B	B	B
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Process refrigeration at high temperature</b>							
Prated,c	(4)	kW	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>							
<b>Process refrigeration at medium temperature</b>							
Prated,c	(5)	kW	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(7)	kW	-	-	-	-	-
SCOP	(7)(8)		-	-	-	-	-
Performance ηs	(7)(9)	%	-	-	-	-	-
Seasonal efficiency class	(7)		-	-	-	-	-
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	29,02	96,81	106,9	108,9	115,5
Pressure drop	(1)	kPa	56,3	43,7	53,3	32,3	36,3
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(3)	l/s	37,78	112,5	112,5	163,5	173,4
Pressure drop	(3)	kPa	95,4	59,0	59,0	72,7	81,9
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	34,61	115,5	127,5	130,0	137,9
Pressure drop	(1)	kPa	36,2	34,6	35,8	35,0	37,0
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>							
Water flow	(3)	l/s	32,77	107,4	117,5	124,6	132,2
Pressure drop	(3)	kPa	32,4	29,9	30,4	32,2	34,0
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.		N°	1	3	3	4	4
No. Circuits		N°	1	3	3	4	4
Refrigerant charge		kg	55,0	269	261	267	260
<b>NOISE LEVEL</b>							
Sound Pressure	(10)	dB(A)	79	82	82	82	82
Sound power level in cooling	(11)(12)	dB(A)	97	102	102	102	102
Sound power level in heating	(11)(13)	dB(A)	0	0	0	0	0
<b>SIZE AND WEIGHT</b>							
A	(14)	mm	3860	4950	4950	4650	4650
B	(14)	mm	900	1700	1700	2250	2250
H	(14)	mm	1840	2150	2150	2230	2230
Operating weight	(14)	kg	2970	10170	10350	14330	14390

**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/6,57°C
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

FOCS2-W-Y / CA-E / H		1301	1401	1601	1801	2101	7204	7804	8404	
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	
<b>PERFORMANCE</b>										
<b>COOLING ONLY (GROSS VALUE)</b>										
Cooling capacity	(1)	kW	320,7	364,7	441,9	506,3	573,7	2025	2157	2294
Total power input	(1)	kW	57,30	65,10	79,06	90,27	102,6	360,7	385,5	410,3
EER	(1)	kW/kW	5,597	5,602	5,587	5,607	5,592	5,614	5,595	5,591
ESEER	(1)	kW/kW	6,490	6,500	6,300	6,400	6,370	6,760	6,640	6,650
<b>COOLING ONLY (EN14511 VALUE)</b>										
Cooling capacity	(1)(2)	kW	319,5	363,3	440,0	504,2	571,4	2019	2149	2286
EER	(1)(2)	kW/kW	5,320	5,330	5,300	5,320	5,310	5,400	5,350	5,350
ESEER	(1)(2)	kW/kW	5,830	5,830	5,650	5,720	5,720	6,130	5,940	5,970
Cooling energy class			A	A	A	A	A	A	A	A
<b>HEATING ONLY (GROSS VALUE)</b>										
Total heating capacity	(3)	kW	357,5	406,5	486,9	558,4	637,5	2235	2352	2543
Total power input	(3)	kW	73,14	83,10	99,44	113,6	129,1	454,1	484,1	516,0
COP		kW/kW	4,891	4,892	4,898	4,915	4,938	4,922	4,859	4,928
<b>HEATING ONLY (EN14511 VALUE)</b>										
Total heating capacity	(2)(3)	kW	358,8	407,9	488,7	560,5	639,9	2242	2359	2551
COP	(2)(3)	kW/kW	4,600	4,600	4,610	4,620	4,630	4,700	4,660	4,680
Cooling energy class			A	A	A	A	A	A	A	A
<b>ENERGY EFFICIENCY</b>										
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>										
<b>Process refrigeration at high temperature</b>										
Prated,c	(4)	kW	319,5	363,3	-	-	-	-	-	-
SEPR	(4)(6)		7,47	7,46	-	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>										
<b>Process refrigeration at medium temperature</b>										
Prated,c	(5)	kW	152,0	172,9	-	-	271,1	-	-	-
SEPR	(5)(6)		4,15	4,17	-	-	4,19	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>										
PDesign	(7)	kW	-	-	-	-	-	-	-	-
SCOP	(7)(8)		-	-	-	-	-	-	-	-
Performance $\eta_s$	(7)(9)	%	-	-	-	-	-	-	-	-
Seasonal efficiency class	(7)		-	-	-	-	-	-	-	-
<b>EXCHANGERS</b>										
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>										
Water flow	(1)	l/s	15,33	17,44	21,13	24,21	27,44	96,82	103,2	109,7
Pressure drop	(1)	kPa	45,7	47,7	53,5	53,4	52,8	41,3	59,3	54,6
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>										
Water flow	(3)	l/s	23,01	26,17	30,56	35,56	41,13	144,1	129,4	160,0
Pressure drop	(3)	kPa	103	107	112	115	119	91,5	93,4	116
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>										
Water flow	(1)	l/s	18,02	20,49	24,84	28,44	32,24	113,7	121,2	128,9
Pressure drop	(1)	kPa	48,4	46,6	51,6	52,6	54,3	52,0	53,3	53,8
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>										
Water flow	(3)	l/s	17,26	19,62	23,50	26,95	30,77	107,9	113,5	122,8
Pressure drop	(3)	kPa	44,4	42,8	46,2	47,3	49,5	46,8	46,8	48,8
<b>REFRIGERANT CIRCUIT</b>										
Compressors nr.		N°	1	1	1	1	1	4	4	4
No. Circuits		N°	1	1	1	1	1	4	4	4
Refrigerant charge		kg	50,0	60,0	75,0	72,0	80,0	320	348	348
<b>NOISE LEVEL</b>										
Sound Pressure	(10)	dB(A)	79	78	78	78	78	82	82	82
Sound power level in cooling	(11)(12)	dB(A)	97	97	97	97	97	102	102	102
Sound power level in heating	(11)(13)	dB(A)	0	0	0	0	0	0	0	0
<b>SIZE AND WEIGHT</b>										
A	(14)	mm	4250	4250	4150	4150	4130	5220	4900	4900
B	(14)	mm	900	900	900	900	900	2250	2250	2250
H	(14)	mm	1815	1910	1990	1990	1990	2305	2455	2455
Operating weight	(14)	kg	2470	2770	3570	3750	3790	13720	15850	16100

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/7°C
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Unit in standard configuration/execution, without optional accessories.

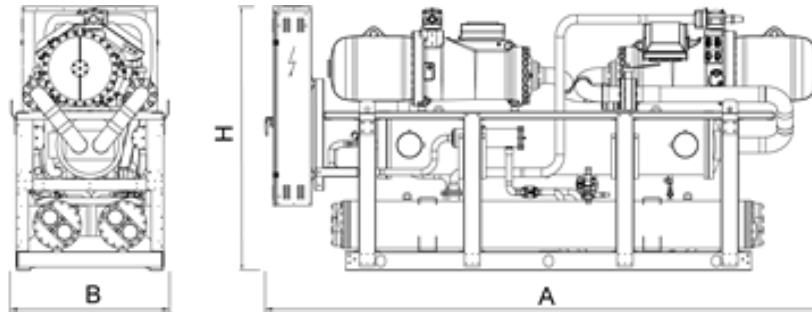
The units highlighted in this publication contain HFC R134a [GWP<sub>100</sub> 1430] fluorinated greenhouse gases.  
Certified data in EUROVENT

# FOCS2-W-Y /H

1301 - 9604 306,0-2416 kW

Water to water high efficiency heat pump, reversible on hydraulic side

## Dimensional drawing





# FOCS2-W-G05-Y /H

1301 - 9604 306,0-2416 kW

Water to water high efficiency heat pump, reversible on hydraulic side



**Unit for indoor installation for chilled/hot water production. Semihermetic screw compressors optimized to operate with low compression ratio and R513A; shell and tubes condenser and direct expansion evaporator; electronic expansion valve. Frame in polyester-painted galvanized steel. High efficiency unit: the innovative optimized compressors and the high performing heat exchangers enhance EER values up to 5,1 (CA version) and even up to 5,6 (CA-E version) at Eurovent standards conditions.**

## Control



### W3000TE

W3000TE features a large keyboard and wide LCD display for an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements. Complete alarm management system is available, with the "black-box" and the alarm history display functions. For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices. Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks.

Compatibility with remote keyboard (up to 8 units). The programmable timer allows the creation of an operating profile up to 4 typical days and 10 time bands. Continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

## Refrigerant



## Versions

CA	High efficiency version	CA-E	Premium efficiency version: Class A enhanced
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## Configurations

H	Function with heat pump, reversible on hydraulic side
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## Features

### HIGH EFFICIENCY

The version 'CA-E' is characterized by efficiency beyond the 'Class A' for Eurovent. The technological choices adopted assure the minimization of operating costs and therefore a quick payback time.

### ADAPTABILITY

Adaptability at the building's heating request thanks to the continuous capacity regulation, assured by sophisticated control's logic.

### SILENT OPERATION

Extremely silent operation thanks to the accurate unit's design. Optional integral acoustic enclosure, reduces more the sound level beyond the best on market

## Accessories

- Kit HWT, High Water Temperature, to produce hot water up to 60°C
- VPF (Variable Primary Flow) system
- Integral acoustical enclosure (type base or plus)
- Set-up for remote connectivity with ModBus/Echelon protocol cards

FOCS2-W-G05-Y /H /CA			1301	1401	1601	1801	2101
Power supply	V/ph/Hz		400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>							
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1)	kW	306,0	348,3	421,8	477,4	537,7
Total power input	(1)	kW	63,01	71,59	86,86	98,34	110,5
EER	(1)	kW/kW	4,857	4,865	4,854	4,857	4,866
ESEER	(1)	kW/kW	5,820	5,830	5,620	5,720	5,820
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2)	kW	304,9	347,0	420,0	475,8	535,8
EER	(1)(2)	kW/kW	4,670	4,680	4,660	4,690	4,690
ESEER	(1)(2)	kW/kW	5,340	5,350	5,160	5,300	5,380
Cooling energy class			B	B	B	B	B
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(3)	kW	346,5	395,1	472,8	535,5	612,6
Total power input	(3)	kW	79,94	90,89	108,5	123,0	138,3
COP		kW/kW	4,337	4,347	4,358	4,354	4,430
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(2)(3)	kW	347,5	396,2	474,1	536,9	614,2
COP	(2)(3)	kW/kW	4,190	4,180	4,180	4,210	4,240
Cooling energy class			B	B	B	B	B
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Process refrigeration at high temperature</b>							
Prated,c	(4)	kW	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>							
<b>Process refrigeration at medium temperature</b>							
Prated,c	(5)	kW	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(7)	kW	-	-	-	-	-
SCOP	(7)(8)		-	-	-	-	-
Performance ηs	(7)(9)	%	-	-	-	-	-
Seasonal efficiency class	(7)		-	-	-	-	-
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	14,64	16,66	20,17	22,83	25,71
Pressure drop	(1)	kPa	41,9	45,0	52,7	41,7	44,2
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(3)	l/s	18,89	21,94	26,39	30,00	37,78
Pressure drop	(3)	kPa	69,8	78,0	90,3	72,0	95,4
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	17,57	20,00	24,22	27,41	30,87
Pressure drop	(1)	kPa	36,4	35,4	35,2	35,1	34,9
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>							
Water flow	(3)	l/s	16,73	19,07	22,82	25,85	29,57
Pressure drop	(3)	kPa	33,0	32,2	31,3	31,2	32,1
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.		N°	1	1	1	1	1
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	45,0	46,0	66,0	66,0	69,0
<b>NOISE LEVEL</b>							
Sound Pressure	(10)	dB(A)	79	79	79	79	79
Sound power level in cooling	(11)(12)	dB(A)	97	97	97	97	97
Sound power level in heating	(11)(13)	dB(A)	0	0	0	0	0
<b>SIZE AND WEIGHT</b>							
A	(14)	mm	3830	3830	3860	3860	3860
B	(14)	mm	900	900	900	900	900
H	(14)	mm	1700	1700	1840	1840	1840
Operating weight	(14)	kg	2050	2110	2590	2810	2910

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/6,57°C
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Unit in standard configuration/execution, without optional accessories.

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FOCS2-W-G05-Y /H /CA			2401	8103	9003	9004	9604
Power supply	V/ph/Hz		400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>							
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1)	kW	606,8	2024	2236	2278	2416
Total power input	(1)	kW	124,7	417,3	460,6	469,7	498,3
EER	(1)	kW/kW	4,866	4,850	4,855	4,850	4,848
ESEER	(1)	kW/kW	5,810	5,970	6,010	6,110	6,050
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2)	kW	604,2	2018	2228	2273	2410
EER	(1)(2)	kW/kW	4,670	4,710	4,700	4,730	4,720
ESEER	(1)(2)	kW/kW	5,320	5,500	5,500	5,680	5,600
Cooling energy class			B	B	B	B	B
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(3)	kW	684,7	2245	2456	2604	2763
Total power input	(3)	kW	155,7	515,5	567,2	587,6	623,8
COP		kW/kW	4,398	4,355	4,330	4,432	4,429
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(2)(3)	kW	686,5	2250	2461	2610	2769
COP	(2)(3)	kW/kW	4,220	4,250	4,240	4,290	4,280
Cooling energy class			B	B	B	B	B
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Process refrigeration at high temperature</b>							
Prated,c	(4)	kW	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>							
<b>Process refrigeration at medium temperature</b>							
Prated,c	(5)	kW	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(7)	kW	-	-	-	-	-
SCOP	(7)(8)		-	-	-	-	-
Performance $\eta_s$	(7)(9)	%	-	-	-	-	-
Seasonal efficiency class	(7)		-	-	-	-	-
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	29,02	96,81	106,9	108,9	115,5
Pressure drop	(1)	kPa	56,3	43,7	53,3	32,3	36,3
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(3)	l/s	37,78	112,5	112,5	163,5	173,4
Pressure drop	(3)	kPa	95,4	59,0	59,0	72,7	81,9
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	34,83	116,3	128,4	130,8	138,8
Pressure drop	(1)	kPa	36,6	35,0	36,3	35,5	37,4
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>							
Water flow	(3)	l/s	33,05	108,4	118,5	125,7	133,4
Pressure drop	(3)	kPa	33,0	30,4	31,0	32,8	34,6
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.		N°	1	3	3	4	4
No. Circuits		N°	1	3	3	4	4
Refrigerant charge		kg	58,0	283	275	281	273
<b>NOISE LEVEL</b>							
Sound Pressure	(10)	dB(A)	79	82	82	82	82
Sound power level in cooling	(11)(12)	dB(A)	97	102	102	102	102
Sound power level in heating	(11)(13)	dB(A)	0	0	0	0	0
<b>SIZE AND WEIGHT</b>							
A	(14)	mm	3860	4950	4950	4650	4650
B	(14)	mm	900	1700	1700	2250	2250
H	(14)	mm	1840	2150	2150	2230	2230
Operating weight	(14)	kg	2970	10170	10350	14330	14390

**Notes**

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- Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/6,57°C
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Unit in standard configuration/execution, without optional accessories.

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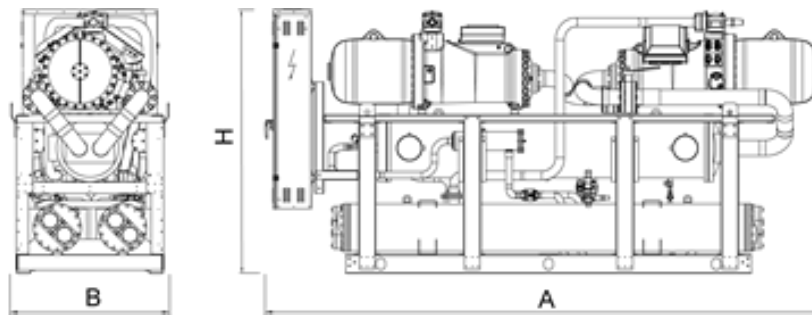
FOCS2-W-G05-Y /H /CA-E		1301	1401	1601	1801	2101	7204	7804	8404
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>									
<b>COOLING ONLY (GROSS VALUE)</b>									
Cooling capacity	(1)	kW	320,7	364,7	441,9	506,3	573,7	2157	2294
Total power input	(1)	kW	59,70	67,84	82,38	94,07	106,9	375,9	427,5
EER	(1)	kW/kW	5,372	5,379	5,363	5,380	5,367	5,387	5,370
ESEER	(1)	kW/kW	6,370	6,370	6,300	6,390	6,380	6,620	6,510
<b>COOLING ONLY (EN14511 VALUE)</b>									
Cooling capacity	(1)(2)	kW	319,5	363,3	440,0	504,2	571,4	2149	2286
EER	(1)(2)	kW/kW	5,110	5,120	5,090	5,110	5,100	5,190	5,140
ESEER	(1)(2)	kW/kW	5,710	5,720	5,630	5,720	5,710	6,020	5,830
Cooling energy class			A	A	A	A	A	A	A
<b>HEATING ONLY (GROSS VALUE)</b>									
Total heating capacity	(3)	kW	360,4	409,8	490,8	562,9	642,6	2253	2563
Total power input	(3)	kW	76,22	86,59	103,6	118,4	134,5	473,2	537,7
COP		kW/kW	4,730	4,732	4,737	4,754	4,778	4,761	4,767
<b>HEATING ONLY (EN14511 VALUE)</b>									
Total heating capacity	(2)(3)	kW	361,8	411,3	492,6	565,0	645,1	2260	2571
COP	(2)(3)	kW/kW	4,460	4,470	4,470	4,480	4,500	4,560	4,530
Cooling energy class			A	A	A	A	A	A	A
<b>ENERGY EFFICIENCY</b>									
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>									
<b>Process refrigeration at high temperature</b>									
Prated,c	(4)	kW	319,5	363,3	-	-	-	-	-
SEPR	(4)(6)		7,21	7,23	-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>									
<b>Process refrigeration at medium temperature</b>									
Prated,c	(5)	kW	152,0	172,9	-	-	271,1	-	-
SEPR	(5)(6)		4,03	4,04	-	-	4,14	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>									
PDesign	(7)	kW	-	-	-	-	-	-	-
SCOP	(7)(8)		-	-	-	-	-	-	-
Performance ηs	(7)(9)	%	-	-	-	-	-	-	-
Seasonal efficiency class	(7)		-	-	-	-	-	-	-
<b>EXCHANGERS</b>									
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>									
Water flow	(1)	l/s	15,33	17,44	21,13	24,21	27,44	96,82	103,2
Pressure drop	(1)	kPa	45,7	47,7	53,5	53,4	52,8	41,3	59,3
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>									
Water flow	(3)	l/s	23,01	26,17	30,56	35,56	41,13	144,1	129,4
Pressure drop	(3)	kPa	103	107	112	115	119	91,5	93,4
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>									
Water flow	(1)	l/s	18,13	20,62	24,99	28,62	32,44	114,4	121,9
Pressure drop	(1)	kPa	49,0	47,2	52,2	53,3	55,0	52,6	54,0
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>									
Water flow	(3)	l/s	17,39	19,78	23,69	27,17	31,02	108,8	114,4
Pressure drop	(3)	kPa	45,1	43,5	46,9	48,0	50,3	47,5	49,6
<b>REFRIGERANT CIRCUIT</b>									
Compressors nr.		N°	1	1	1	1	1	4	4
No. Circuits		N°	1	1	1	1	1	4	4
Refrigerant charge		kg	53,0	63,0	79,0	76,0	84,0	336	366
<b>NOISE LEVEL</b>									
Sound Pressure	(10)	dB(A)	79	78	78	78	78	82	82
Sound power level in cooling	(11)(12)	dB(A)	97	97	97	97	97	102	102
Sound power level in heating	(11)(13)	dB(A)	0	0	0	0	0	0	0
<b>SIZE AND WEIGHT</b>									
A	(14)	mm	4250	4250	4150	4150	4130	5220	4900
B	(14)	mm	900	900	900	900	900	2250	2250
H	(14)	mm	1815	1910	1990	1990	1990	2305	2455
Operating weight	(14)	kg	2470	2770	3570	3750	3790	13720	15850

#### Notes

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- Values in compliance with EN14511
- Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/7°C
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
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- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Unit in standard configuration/execution, without optional accessories.

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Dimensional drawing





**i-FX-W (1+i)-Y /H**

1402 - 4652 532,3-1784 kW

Water to water high efficiency heat pump, reversible on hydraulic side



**Single circuit indoor unit for the production of chilled/hot water, with fixed speed and variable speed (Inverter Driven) screw compressors optimized for R134a, electronic expansion valve, high performing shell and tube condenser and shell and tube flooded evaporator, both designed and produced by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A.. These technological solutions enhance the EER values over 5,7 at Eurovent standard conditions. The resulting unit is extremely compact, thanks to the strategic layout, designed without base, frame and panels.**

**Control****W3000TE**

W3000TE features a large keyboard and wide LCD display for an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements. Complete alarm management system is available, with the "black-box" and the alarm history display functions. For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices. Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks.

Compatibility with remote keyboard (up to 8 units). The programmable timer allows the creation of an operating profile up to 4 typical days and 10 time bands. Continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

**Refrigerant****Versions**

CA High energy efficiency units

**Configurations**

H Function with heat pump, reversible on hydraulic side

**Features****HIGH EFFICIENCY**

Unit with high efficiency and reduced energy consumption, thanks to the inverter technology, contributing to lower operating costs and therefore achieving a quick return on investment.

**FLEXIBILITY**

Unit featured by remarkable application flexibility thanks to the inverter technology which allows to obtain, taking in consideration the cooling capacity needed, the best result about costs/performances and maximum efficiency.

**TOTAL VERSATILITY**

Unit designed gathering in a single circuit a compressor with step regulation and one working with inverter, in order to guarantee the best answer to plant necessities both at full and at part loads.

**MAXIMUM COMPACTNESS**

Maximum compactness to achieve a very high flexibility in the design process and installation operations, offering a premium solution in case of reduced clearances or when retrofitting existing installations.

**Accessories**

- Touch Screen visual display
- VPF (Variable Primary Flow) system
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Several devices for condensation's control

i-FX-W (1+i)-Y /H			1402	1752	1902	2152	2602
Power supply	V/ph/Hz		400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>							
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1)	kW	532,3	665,0	721,0	819,3	998,7
Total power input	(1)	kW	97,87	119,5	129,9	148,3	181,7
EER	(1)	kW/kW	5,437	5,565	5,550	5,525	5,496
ESEER	(1)	kW/kW	8,520	8,570	8,470	8,620	8,630
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2)	kW	486,7	608,1	659,4	750,0	914,3
EER	(1)(2)	kW/kW	5,370	5,490	5,480	5,470	5,470
ESEER	(1)(2)	kW/kW	7,460	7,510	7,400	7,530	7,530
Cooling energy class			A	A	A	A	A
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(3)	kW	587,7	725,1	795,0	903,5	1089
Total power input	(3)	kW	123,7	150,9	164,6	188,0	226,9
COP		kW/kW	4,751	4,805	4,830	4,806	4,799
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(2)(3)	kW	540,1	666,6	730,6	830,5	1000
COP	(2)(3)	kW/kW	4,650	4,730	4,730	4,730	4,740
Cooling energy class			A	A	A	A	A
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Process refrigeration at high temperature</b>							
Prated,c	(4)	kW	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>							
<b>Process refrigeration at medium temperature</b>							
Prated,c	(5)	kW	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(7)	kW	-	-	-	-	-
SCOP	(7)(8)		-	-	-	-	-
Performance $\eta_s$	(7)(9)	%	-	-	-	-	-
Seasonal efficiency class	(7)		-	-	-	-	-
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	23,34	29,16	31,62	35,96	43,84
Pressure drop	(1)	kPa	30,5	34,7	33,8	33,2	37,1
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(3)	l/s	34,17	38,89	44,44	50,00	59,72
Pressure drop	(3)	kPa	65,4	61,7	66,8	64,1	68,9
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	27,44	34,18	37,07	42,16	51,41
Pressure drop	(1)	kPa	37,4	35,4	41,7	41,5	38,7
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>							
Water flow	(3)	l/s	26,00	32,10	35,17	39,97	48,17
Pressure drop	(3)	kPa	33,6	31,2	37,5	37,3	34,0
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.		N°	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	118	160	164	177	258
<b>NOISE LEVEL</b>							
Sound Pressure	(10)	dB(A)	82	82	81	83	83
Sound power level in cooling	(11)(12)	dB(A)	100	100	100	102	102
Sound power level in heating	(11)(13)	dB(A)	100	100	100	102	102
<b>SIZE AND WEIGHT</b>							
A	(14)	mm	2950	3310	3310	3310	4475
B	(14)	mm	1320	1425	1445	1480	1410
H	(14)	mm	1805	1935	2000	2150	2250
Operating weight	(14)	kg	3350	4280	4410	4830	6630

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/6,7°C
- Seasonal energy efficiency of high temperature process cooling [REGULATION (EU) N. 2016/2281]
- Seasonal Energy Efficiency of Process Cooling at Medium Temperature [REGULATION (EU) N. 2015/1095]
- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

i-FX-W (1+i)-Y /H			3002	3402	3852	4252	4652
Power supply	V/ph/Hz		400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>							
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1)	kW	1143	1296	1472	1607	1784
Total power input	(1)	kW	207,3	233,3	264,5	291,6	329,6
EER	(1)	kW/kW	5,514	5,555	5,565	5,511	5,413
ESEER	(1)	kW/kW	8,550	8,560	8,600	8,440	8,390
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2)	kW	1046	1186	1348	1482	1632
EER	(1)(2)	kW/kW	5,520	5,580	5,620	5,520	5,470
ESEER	(1)(2)	kW/kW	7,590	7,650	7,740	7,490	7,440
Cooling energy class			A	A	A	A	A
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(3)	kW	1245	1433	1627	1758	1932
Total power input	(3)	kW	258,9	291,6	330,4	362,2	407,1
COP		kW/kW	4,809	4,914	4,924	4,854	4,746
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(2)(3)	kW	1142	1313	1490	1624	1769
COP	(2)(3)	kW/kW	4,770	4,860	4,890	4,810	4,760
Cooling energy class			A	A	A	A	A
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Process refrigeration at high temperature</b>							
Prated,c	(4)	kW	-	1186	1348	-	-
SEPR	(4)(6)		-	7,98	8,04	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>							
<b>Process refrigeration at medium temperature</b>							
Prated,c	(5)	kW	-	564,2	643,1	-	-
SEPR	(5)(6)		-	4,75	4,78	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(7)	kW	-	-	-	-	-
SCOP	(7)(8)		-	-	-	-	-
Performance $\eta_s$	(7)(9)	%	-	-	-	-	-
Seasonal efficiency class	(7)		-	-	-	-	-
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	50,15	56,88	64,63	71,06	78,30
Pressure drop	(1)	kPa	37,5	31,9	30,9	37,3	45,3
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(3)	l/s	68,06	84,97	96,56	97,22	97,22
Pressure drop	(3)	kPa	69,0	71,1	68,9	69,8	69,8
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	58,76	66,56	75,57	83,27	91,86
Pressure drop	(1)	kPa	30,0	33,3	29,6	35,9	29,5
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>							
Water flow	(3)	l/s	55,03	63,24	71,79	78,19	85,24
Pressure drop	(3)	kPa	26,3	30,1	26,7	31,7	25,4
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.		N°	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	295	315	323	338	338
<b>NOISE LEVEL</b>							
Sound Pressure	(10)	dB(A)	83	82	82	84	84
Sound power level in cooling	(11)(12)	dB(A)	102	102	102	104	104
Sound power level in heating	(11)(13)	dB(A)	102	102	102	104	104
<b>SIZE AND WEIGHT</b>							
A	(14)	mm	4475	4570	4650	4650	4850
B	(14)	mm	1405	1435	1495	1495	1495
H	(14)	mm	2250	2380	2500	2500	2500
Operating weight	(14)	kg	7470	8220	8800	8930	9340

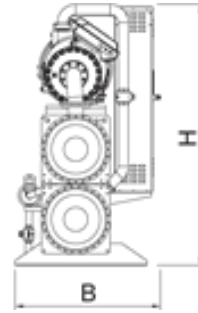
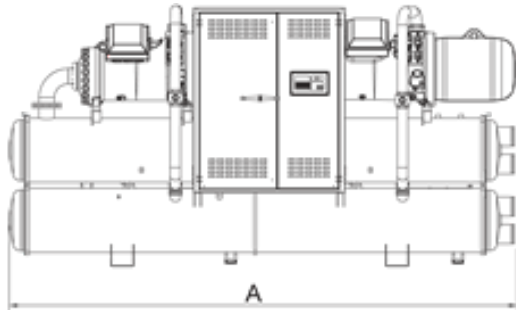
**Notes**

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/6,7°C
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- Seasonal energy efficiency ratio
- Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
- Seasonal coefficient of performance
- Seasonal space heating energy efficiency
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, indoors.
- Sound power level in heating, indoors.
- Unit in standard configuration/execution, without optional accessories.

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Certified data in EUROVENT

**Dimensional drawing**





**i-FX-W (1+i)-G05-Y/H**

1402 - 4652 532,3-1784 kW

Water to water high efficiency heat pump, reversible on hydraulic side



Single circuit indoor unit for the production of chilled/hot water, with fixed speed and variable speed (Inverter Driven) screw compressors optimized for R513A, electronic expansion valve, high performing shell and tube condenser and shell and tube flooded evaporator, both designed and produced by Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A.. These technological solutions enhance the EER values over 5,7 at Eurovent standard conditions. The resulting unit is extremely compact, thanks to the strategic layout, designed without base, frame and panels.

**Control****W3000TE**

W3000TE features a large keyboard and wide LCD display for an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements. Complete alarm management system is available, with the "black-box" and the alarm history display functions. For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices. Consumption metering and performance measurement are possible and supervision can be developed via proprietary devices or the integration in third party systems by means of the most common protocols ModBus, Bacnet, Bacnet-over-IP, LonWorks.

Compatibility with remote keyboard (up to 8 units). The programmable timer allows the creation of an operating profile up to 4 typical days and 10 time bands. Continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

**Refrigerant****Versions**

CA High energy efficiency units

**Configurations**

H Function with heat pump, reversible on hydraulic side

**Features****HIGH EFFICIENCY**

Unit with high efficiency and reduced energy consumption, thanks to the inverter technology, contributing to lower operating costs and therefore achieving a quick return on investment.

**FLEXIBILITY**

Unit featured by remarkable application flexibility thanks to the inverter technology which allows to obtain, taking in consideration the cooling capacity needed, the best result about costs/performances and maximum efficiency.

**TOTAL VERSATILITY**

Unit designed gathering in a single circuit a compressor with step regulation and one working with inverter, in order to guarantee the best answer to plant necessities both at full and at part loads.

**MAXIMUM COMPACTNESS**

Maximum compactness to achieve a very high flexibility in the design process and installation operations, offering a premium solution in case of reduced clearances or when retrofitting existing installations.

**Accessories**

- Touch Screen visual display
- VPF (Variable Primary Flow) system
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Several devices for condensation's control

<b>i-FX-W (1+i)-G05-Y</b>			<b>1402</b>	<b>1752</b>	<b>1902</b>	<b>2152</b>	<b>2602</b>
Power supply	V/ph/Hz		400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>							
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1)	kW	532,3	665,0	721,0	819,3	998,7
Total power input	(1)	kW	102,0	124,6	135,4	154,6	189,4
EER	(1)	kW/kW	5,219	5,337	5,325	5,299	5,273
ESEER	(1)	kW/kW	8,360	8,410	8,310	8,450	8,440
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2)	kW	486,7	608,1	659,4	750,0	914,3
EER	(1)(2)	kW/kW	5,160	5,280	5,260	5,260	5,260
ESEER	(1)(2)	kW/kW	7,340	7,380	7,270	7,390	7,400
Cooling energy class			A	A	A	A	A
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(3)	kW	592,6	731,1	801,5	910,9	1098
Total power input	(3)	kW	128,9	157,3	171,5	195,9	236,4
COP		kW/kW	4,597	4,648	4,673	4,650	4,645
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(2)(3)	kW	544,5	672,0	736,5	837,2	1009
COP	(2)(3)	kW/kW	4,500	4,580	4,590	4,580	4,600
Cooling energy class			A	A	A	A	A
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Process refrigeration at high temperature</b>							
Prated,c	(4)	kW	-	-	-	-	-
SEPR	(4)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>							
<b>Process refrigeration at medium temperature</b>							
Prated,c	(5)	kW	-	-	-	-	-
SEPR	(5)(6)		-	-	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(7)	kW	-	-	-	-	-
SCOP	(7)(8)		-	-	-	-	-
Performance $\eta_s$	(7)(9)	%	-	-	-	-	-
Seasonal efficiency class	(7)		-	-	-	-	-
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	23,34	29,16	31,62	35,96	43,84
Pressure drop	(1)	kPa	30,5	34,7	33,8	33,2	37,1
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(3)	l/s	34,17	38,89	44,44	50,00	59,72
Pressure drop	(3)	kPa	65,4	61,7	66,8	64,1	68,9
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	27,61	34,38	37,29	42,42	51,72
Pressure drop	(1)	kPa	37,8	35,8	42,2	42,0	39,2
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>							
Water flow	(3)	l/s	26,21	32,35	35,45	40,30	48,55
Pressure drop	(3)	kPa	34,1	31,7	38,1	37,9	34,5
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.		N°	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	130	176	181	195	284
<b>NOISE LEVEL</b>							
Sound Pressure	(10)	dB(A)	82	82	81	83	83
Sound power level in cooling	(11)(12)	dB(A)	100	100	100	102	102
Sound power level in heating	(11)(13)	dB(A)	100	100	100	102	102
<b>SIZE AND WEIGHT</b>							
A	(14)	mm	2950	3310	3310	3310	4475
B	(14)	mm	1320	1425	1445	1480	1410
H	(14)	mm	1805	1935	2000	2150	2250
Operating weight	(14)	kg	3350	4280	4410	4830	6630

#### Notes

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger water (in/out) 30°C/35°C.
- Values in compliance with EN14511
- Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/6,7°C
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i-FX-W (1+i)-G05-Y			3002	3402	3852	4252	4652
Power supply	V/ph/Hz		400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
<b>PERFORMANCE</b>							
<b>COOLING ONLY (GROSS VALUE)</b>							
Cooling capacity	(1)	kW	1143	1296	1472	1607	1784
Total power input	(1)	kW	216,0	243,1	275,6	303,9	343,4
EER	(1)	kW/kW	5,292	5,331	5,341	5,288	5,195
ESEER	(1)	kW/kW	8,380	8,400	8,430	8,280	8,230
<b>COOLING ONLY (EN14511 VALUE)</b>							
Cooling capacity	(1)(2)	kW	1046	1186	1348	1482	1632
EER	(1)(2)	kW/kW	5,310	5,360	5,400	5,300	5,260
ESEER	(1)(2)	kW/kW	7,460	7,500	7,600	7,360	7,300
Cooling energy class			A	A	A	A	A
<b>HEATING ONLY (GROSS VALUE)</b>							
Total heating capacity	(3)	kW	1255	1445	1640	1772	1948
Total power input	(3)	kW	269,8	303,8	344,3	377,4	424,2
COP		kW/kW	4,652	4,756	4,763	4,695	4,592
<b>HEATING ONLY (EN14511 VALUE)</b>							
Total heating capacity	(2)(3)	kW	1151	1323	1502	1637	1783
COP	(2)(3)	kW/kW	4,620	4,710	4,740	4,660	4,610
Cooling energy class			A	A	A	A	A
<b>ENERGY EFFICIENCY</b>							
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>							
<b>Process refrigeration at high temperature</b>							
Prated,c	(4)	kW	-	1186	1348	-	-
SEPR	(4)(6)		-	7,82	7,89	-	-
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2015/1095)</b>							
<b>Process refrigeration at medium temperature</b>							
Prated,c	(5)	kW	-	563,9	642,8	-	-
SEPR	(5)(6)		-	4,67	4,68	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>							
PDesign	(7)	kW	-	-	-	-	-
SCOP	(7)(8)		-	-	-	-	-
Performance $\eta_s$	(7)(9)	%	-	-	-	-	-
Seasonal efficiency class	(7)		-	-	-	-	-
<b>EXCHANGERS</b>							
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	50,15	56,88	64,63	71,06	78,30
Pressure drop	(1)	kPa	37,5	31,9	30,9	37,3	45,3
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>							
Water flow	(3)	l/s	68,06	84,97	96,56	97,22	97,22
Pressure drop	(3)	kPa	69,0	71,1	68,9	69,8	69,8
<b>HEAT EXCHANGER SOURCE SIDE IN REFRIGERATION</b>							
Water flow	(1)	l/s	59,11	66,96	76,02	83,76	92,41
Pressure drop	(1)	kPa	30,3	33,7	30,0	36,4	29,9
<b>HEAT EXCHANGER SOURCE SIDE IN HEATING</b>							
Water flow	(3)	l/s	55,47	63,73	72,34	78,81	85,93
Pressure drop	(3)	kPa	26,7	30,5	27,1	32,2	25,8
<b>REFRIGERANT CIRCUIT</b>							
Compressors nr.		N°	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1
Refrigerant charge		kg	325	347	356	372	372
<b>NOISE LEVEL</b>							
Sound Pressure	(10)	dB(A)	83	82	82	84	84
Sound power level in cooling	(11)(12)	dB(A)	102	102	102	104	104
Sound power level in heating	(11)(13)	dB(A)	102	102	102	104	104
<b>SIZE AND WEIGHT</b>							
A	(14)	mm	4475	4570	4650	4650	4850
B	(14)	mm	1405	1435	1495	1495	1495
H	(14)	mm	2250	2380	2500	2500	2500
Operating weight	(14)	kg	7470	8220	8800	8930	9340

**Notes**

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- Values in compliance with EN14511
- Plant (side) heating exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger water (in/out) 10°C/6,7°C
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**Dimensional drawing**

