CLIMAVENETA

TECHNICAL SELECTION

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HEATING
COOLING

TECHNICAL SELECTION

NX-WN-Y /0904
Reversible heat pump, water source



R HFC R-410A
SCROLL

Code		NX-WN-Y /0904
Version		-
Size		0904
Power supply	V/ph/Hz	400/3/50
Project - Selection Code		P5CE4DA5-S01

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1.1 SUMMARY

UNIT DESCRIPTION		
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Code		NX-WN-Y /0904
Version		
Size		0904
UNIT DESCRIPTION [General descriptions and images of the range, not specific to the choice of model]		Reversible heat pump, water source
Power supply	V/ph/Hz	400/3/50
Production Plant		EUROPE

1.2 PERFORMANCE

COOLING		
HEAT EXCHANGER USER SIDE		
Fluid type		WATER
Fouling factor	m²K/kW	0.0180
Fluid inlet temperature (cooling mode)	°C	12.00
Fluid outlet temperature (cooling mode)	°C	7.00
Water flow user side heat ex (cooling mode)	l/s	12.84
Pressure drop at the user side heat ex (cooling mode)	kPa	18.1
Available unit head	kPa	0.00
HEAT EXCHANGER SOURCE SIDE		
Fluid		ETHYLENE GLYCOL
Glycol	%	25
Fouling factor	m²K/kW	0.0180
Fluid inlet temperature (cooling mode)	°C	30.00
Fluid outlet temperature (cooling mode)	°C	35.00
Water flow source side heat ex (cooling mode)	l/s	16.63
Pressure drop at the source side heat ex (cooling mode)	kPa	35.2
Available unit head	kPa	0.00
COOLING (Gross value)		
Cooling capacity	kW	268.5
Compressor power input	kW	58.15
Total power input (cooling mode)	kW	58.15
EER	kW/kW	4.613
Heat rejection capacity	kW	323.2
Note		Efficiency parameter available on request (For any further information please contact our Sales department)
COOLING (EN 14511)		
Cooling capacity	kW	267.9
Effective power input	kW	59.80
EER	kW/kW	4.480

The performance shown are obtained from theoretical calculations and tolerances will apply.Rpt.version:2.0.0.0

Heat rejection capacity	kW	324

HEATING		
HEAT EXCHANGER USER SIDE		
Fluid type		WATER
Fouling factor	m²K/kW	0.0180
Fluid inlet temperature (heating mode)	°C	40.00
Fluid outlet temperature (heating mode)	°C	45.00
Water flow user side heat ex (heating mode)	l/s	12.26
Pressure drop at the heat ex 1 (heating mode)	kPa	16.5
Available unit head	kPa	0.00
HEAT EXCHANGER SOURCE SIDE		
Fluid		ETHYLENE GLYCOL
Glycol	%	25
Fouling factor	m²K/kW	0.0180
Fluid inlet temperature (heating mode)	°C	5.00
Fluid outlet temperature (heating mode)	°C	1.00
Water flow source side heat ex (heating mode)	l/s	12.45
Pressure drop at the heat ex 2 (heating mode)	kPa	19.7
Available unit head	kPa	0.00
HEATING (Gross value)		
Total heating capacity	kW	254.0
Compressors power input (heating mode)	kW	67.40
Total power input (heating mode)	kW	67.40
COP	kW/kW	3.769
Note		Efficiency parameter available on request (For any further information please contact our Sales department)
HEATING (EN14511)		
Total heating capacity	kW	254.5
Effective power input	kW	68.40
COP	kW/kW	3.720

1.3 PART LOAD DATA

COOLING PARTIAL LOADS											
INPUT											
Load	%	100.0	90.0	80.0	70.0	60.0	50.0	40.0	30.0	20.0	10.0
Condenser output temperature	°C	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Condenser fluid flow	l/s	16.63	16.63	16.63	16.63	16.63	16.63	16.63	16.63	16.63	16.63

OUTPUT											
Load	%	100.0	90.0	80.0	70.0	60.0	50.0	40.0	30.0	*20.0*	*10.0*
Temp. evaporator inlet	°C	12.00	11.50	11.00	10.50	10.00	9.50	9.00	8.50	*8.13*	*8.13*
Temp. evaporator outlet	°C	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	*7.00*	*7.00*
Evaporator water flow	l/s	12.84	12.84	12.84	12.84	12.84	12.84	12.84	12.84	*12.84*	*12.84*
Pressure drop	kPa	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	*18.1*	*18.1*
Condenser input temperature	°C	30.00	30.50	31.01	31.51	32.01	32.51	33.01	33.51	*33.87*	*33.87*
Condenser output temperature	°C	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	*35.00*	*35.00*
Condenser fluid flow	l/s	16.63	16.63	16.63	16.63	16.63	16.63	16.63	16.63	*16.63*	*16.63*
Pressure drop	kPa	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	*35.2*	*35.2*
Cooling load	kW	268.5	241.7	214.8	188.0	161.1	134.3	107.4	80.60	*53.70*	*26.90*
Total power input	kW	58.20	52.10	45.90	39.90	34.00	28.10	22.30	16.70	*11.30*	*6.270*
EER	kW/kW	4.613	4.641	4.675	4.712	4.740	4.779	4.807	4.819	*4.769*	*4.291*
Note		Note: italics texts mean integrated values under minimum step. For these operating points, the fluid temperatures and flow rate at the heat exchanger(s) correspond to those calculated at the minimum capacity step.									

HEATING PART LOAD											
INPUT											
Load	%	100.0	90.0	80.0	70.0	60.0	50.0	40.0	30.0	20.0	10.0
Temp evaporator outlet	°C	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Evaporator fluid flow	l/s	12.45	12.45	12.45	12.45	12.45	12.45	12.45	12.45	12.45	12.45
OUTPUT											
Load	%	100.0	90.0	80.0	70.0	60.0	50.0	40.0	30.0	*20.0*	*10.0*
Condenser input temperature	°C	40.00	40.50	41.00	41.50	42.00	42.50	43.00	43.50	*43.91*	*43.91*
Condenser output temperature	°C	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	*45.00*	*45.00*
Condenser fluid flow	l/s	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	*12.26*	*12.26*
Pressure drop	kPa	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	*16.5*	*16.5*
Temp. evaporator inlet	°C	5.00	4.60	4.20	3.80	3.40	3.00	2.60	2.20	*1.87*	*1.87*
Temp evaporator outlet	°C	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*1.00*	*1.00*
Evaporator fluid flow	l/s	12.45	12.45	12.45	12.45	12.45	12.45	12.45	12.45	*12.45*	*12.45*
Pressure drop	kPa	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	*19.7*	*19.7*
Heating load	kW	254	229	203	178	152	127	102	76	*51*	*25*
Total power input	kW	67.40	60.70	54.10	47.40	40.50	33.60	26.80	20.10	*13.50*	*7.500*
COP	kW/kW	3.769	3.763	3.757	3.751	3.762	3.777	3.789	3.788	*3.754*	*3.389*
Note		Note: italics texts mean integrated values under minimum step. For these operating points, the fluid temperatures and flow rate at the heat exchanger(s) correspond to those calculated at the minimum capacity step.									

1.4 SCOP

SCOP Official (Reg. 813/2013 EU)		
LOW TEMPERATURE		
Type climate		Average
Temperature application	°C	35
Type flow		fixed
Type Temperature		variable
Bivalent temperature	°C	-7.0
PDesign	kW	368
Qhe	kWh	126394
SCOP on		6.04
SCOP net		6.09
SCOP low temperature		6.02
Performance ηs	%	233
Seasonal efficiency class (from D to A+++)		-
Note		Any SCOP values different from what is reported in commercial documentations are due to the different configuration of the unit and/or different calculation parameters input by the user.
MEDIUM TEMPERATURE		
Type climate		Average
Temperature application	°C	55
Type flow		fixed
Type Temperature		variable
Bivalent temperature	°C	-7.0
PDesign	kW	331
Qhe	kWh	143047
SCOP on		4.79
SCOP net		4.82
SCOP high temperature		4.78
Performance ηs	%	183
Seasonal efficiency class (from D to A+++)		-
Note		Any SCOP values different from what is reported in commercial documentations are due to the different configuration of the unit and/or different calculation parameters input by the user.

SCOP Editable (EN 14825)	
Code	NX-WN-Y /0904
Note	Any SCOP values different from what is reported in commercial documentations are due to the different configuration of the unit and/or different calculation parameters input by the user.

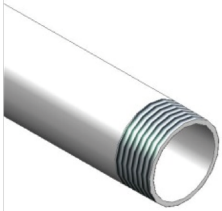
1.5 MAIN COMPONENTS

EXCHANGERS

HEAT EXCHANGER USER SIDE

Typology		PLATE
Quantity	N°	1
Type of connections		[B1] - Male threaded pipe (EN 10226 - R: external taper thread)
Diameter of connections		4"
Min flow	l/s	8.194
Max flow	l/s	21.92
Heat exchanger water content	l	35.9
Minimum water content admitted in the plant	l	970

[B1]



HEAT EXCHANGER SOURCE SIDE

Typology		PLATE
Quantity	N°	1
Type of connections		[B1] - Male threaded pipe (EN 10226 - R: external taper thread)
Diameter of connections		4"
Min flow	l/s	8.750
Max flow	l/s	22.61
Water content	l	35.9

[B1]



COMPRESSORS

COMPRESSORS

Compressor type		SCROLL
Compressors nr.	N°	4
No. Circuits	N°	2
Number of capacity steps	N°	4
Min. capacity step	%	25
Regulation		STEPS
Oil charge	kg	22.9
F.L.I. - Max absorbed power	kW	2x22.3+2x27.4
F.L.A. - Max absorbed current	A	2x36.1+2x45.8
L.R.A. - Locked rotor amperes for single compressor	A	2x225+2x272

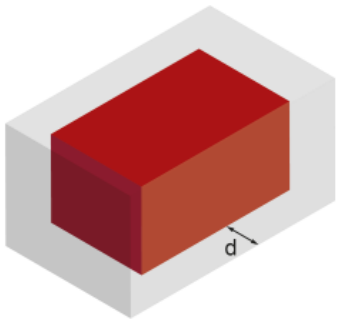
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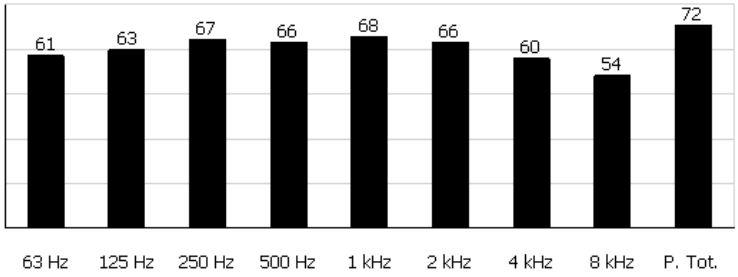
REFRIGERANT		
REFRIGERANT		
Refrigerant		R410A
Theoretical refrigerant charge	kg	33.3
GWP100 value (from IPCC AR5)		1924
CO2 equivalent	t	64.1
ASHRAE Safety Classification		A1

1.6 OTHER DATA

NOISE DATA									
SOUND DATA COLD									
Frequencies	Hz	63	125	250	500	1000	2000	4000	8000
Sound power (spectrum)	dB	78	80	84	83	85	83	77	71
Total sound power level in cooling	dB(A)				89				
Sound pressure level (spectrum)	dB	61	63	67	66	68	66	60	54
Total sound Pressure	dB(A)				72				

The performance shown are obtained from theoretical calculations and tolerances will apply.Rpt.version:2.0.0.0





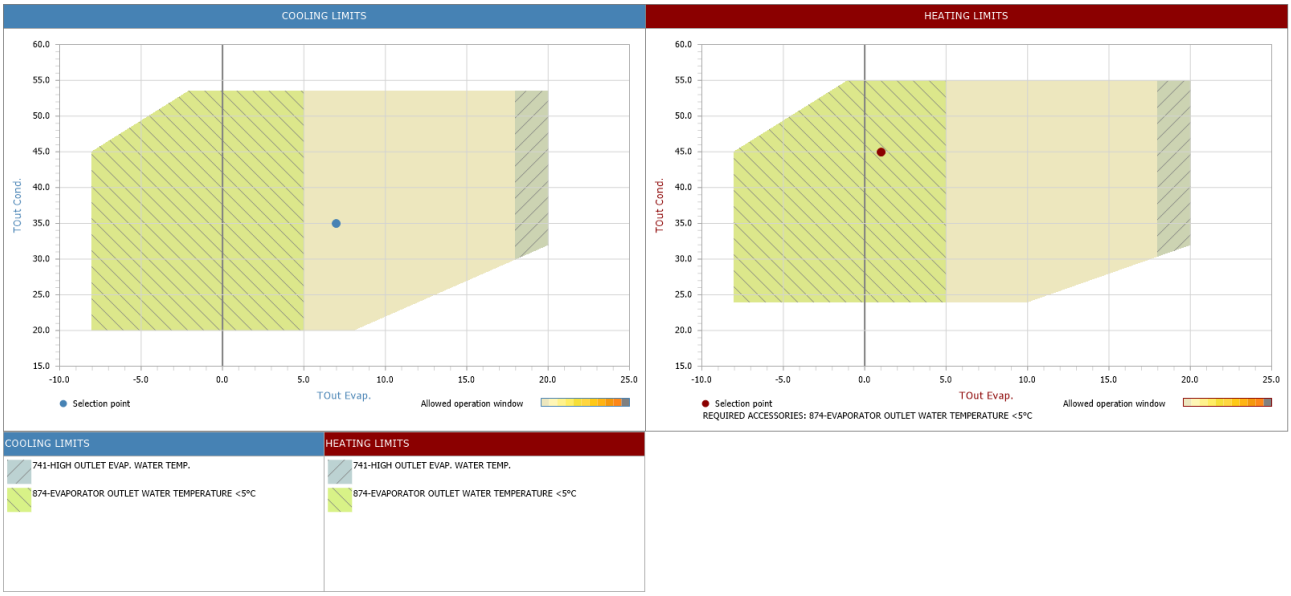
SOUND DATA INDOOR HOT		
Sound power level in heating	dB(A)	90
Note		
Distance	m	1
Note		Average sound pressure level at 1 m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level. Sound power on the basis of measurements taken in compliance with ISO 9614.

ELECTRICAL DATA

ELECTRICAL DATA		
Power supply	V/ph/Hz	400/3/50
F.L.I. - Max absorbed power	kW	99.00
F.L.A. - Max absorbed current	A	164
S.A. - Inrush current	A	390

OPERATING LIMITS

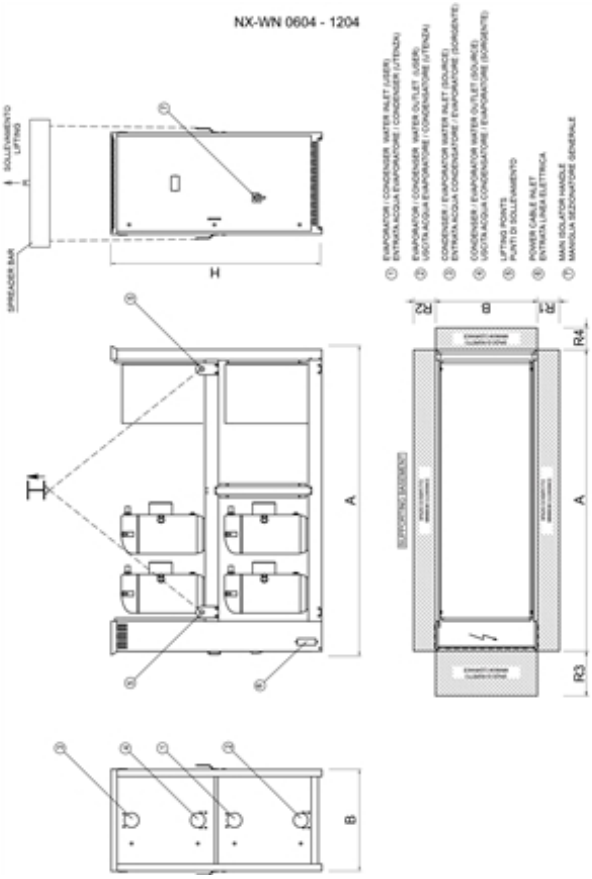
OPERATING LIMITS



WEIGHT & DIMENSIONS

WEIGHT & DIMENSIONS

A	mm	2650
B	mm	885
H	mm	1805
Operating weight	kg	1450
R1	mm	800
R2	mm	800
R3	mm	1000
R4	mm	600



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1.7 Accessory List

Accessory	Code	Description
WITH REVERSIBLE CYCLE NX-WN	5351	-
Reg.2013/813 SCOP compliant	0111	-
Power supply 400V/3ph/50Hz + PE	321	-
REMOTE SUMMER/WINTER SWITCH	4161	Allows to change the operating mode (Cooling/Heating) according to a remote switch
AUXILIARY SIGNAL 4-20mA	6161	Allows to change the operating set-point according to the value of current applied to the analogue input.
COMPACT KEYBOARD	6192	Features a multi-language menu (with the W3000 software there are 3 languages available). Allows the connection of the remote keyboard. When equipped with a real time clock (optional), enables the alarm history display function.
ELECTRONIC EXPANSION VALVE	1941	Electronic lamination device wtih step motor. It is designed for the continuous and precise control of refrigerant flow entering in the evaporator. This solution permits extremely short times for reaction to variation in load, optimising power consumption.
EVAPORATOR OUTLET WATER TEMPERATURE <5°C	874	Dedicated components to the application to allow always the best performances in all working conditions.
U - RELAY 1 PUMP (ON/OFF)	4732	The hydronic module controls the external pumps with the unit controller logic.
U - CONSTANT FLOW	4871	The unit is set up to operate with a constant water flow in the heat exchanger (plant primary circuit). This is the only option available in case of unit without any water flow regulation devices (no pumps, no contacts), which means with water flow control provided by others. In case of unit with ON/FF regulation devices or fixed speed pumps, the unit controller manages the pump activation to reduce pump consumption.
S - RELAY 1 PUMP (ON/OFF)	4832	The hydronic module controls the external pumps with the unit controller logic.
S - NO VALVE	4920	Condensing control device is to be provided by others. The unit controller logic allows to control the condensing device.
WATER CONNECTIONS ON BACK SIDE	2964	-
UNIT WITHOUT PUMPS	9940	-
PAINTED STEEL PANELS	2042	-
WITHOUT ENCLOSURE	2340	-
ITALIAN USER INTERFACE	1181	-
SUPPORTS AND NYLON	9999	-