

NSM 1402-9603

Technical manual



AIR-WATER CHILLER

Cooling capacity 302,4 ÷ 2106,4 kW

Dear Customer,

Thank you for wanting to learn about a product Aermec. This product is the result of many years of experience and in-depth engineering research, and it is built using top quality materials and advanced technologies.

The manual you are about to read is meant to present the product and help you select the unit that best meets the needs of your system.

However, please note that for a more accurate selection, you can also use the Magellano selection program, available on our website.

Aermec Aermec, always attentive to the continuous changes in the market and its regulations, reserves the right to make all the changes deemed necessary for improving the product, including technical data.

Thank you again.

AERMEC S.p.A.

CERTIFICATIONS



COMPANY CERTIFICATIONS



SAFETY CERTIFICATIONS



This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled disposal of Waste Electrical and Electronic Equipment (WEEE), please return the device using appropriate collection systems, or contact the retailer where the product was purchased. Please contact your local authority for further details. Illegal dumping of the product by the user entails the application of administrative sanctions provided by law.

EC DECLARATION OF CONFORMITY



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NSM 1402-9603

MODEL	_____	<div style="border: 1px dashed black; width: 200px; height: 80px;"></div>
SERIAL NUMBER	_____	
DATE	_____	

We, the undersigned, hereby declare under our own responsibility that the assembly in question, defined as follows:

Name: NSM

Type: Air-water chiller

Models: NSM_1402-9603_Indici_EE, NSM_1407_CO

to which this declaration refers, complies with all the provisions related to the following directives:

Machinery Directive 2006/42/EC

Erp Directive 2009/125/CE

RoHS Directive on the restriction of the use of certain hazardous substances in EEE: 2011/65/UE

PED Directive regarding pressurised devices: 2014/68/UE

Electromagnetic Compatibility Directive EMCD: 2014/30/UE

The above-mentioned declaration complies with the harmonised European standards:

UNI EN 378-2: 2017

UNI EN ISO 12100: 2010

CEI EN 61000-6-4: 2007

CEI EN 61000-6-2: 2006

CEI EN 60335-2-40 / A2: 2009

CEI EN 60204-1: 2018

This declaration of conformity has been released under the exclusive responsibility of the manufacturer.

The person authorised to draw up the technical file is Luca Martin.

The unit complies with the project data indicated in the technical file in the paragraph Definition of the Assembly, is in agreement with Directive 2014/68/EU and satisfies the Total Guarantee procedure (form H) with certificate no. 06/270-QT33664 Rev.14 issued by the notified body no. 1131 CEC via Pisacane 46 Legnano (MI) - Italia.

The list of critical components relevant to the above factory number, in accordance with the provisions of Directive 2014/64/EU, is provided together with this Declaration of Conformity (doc. "List of components for Declaration of Conformity").

We also declare that, at the time this preloaded equipment was placed on the European market by Aermec S.p.A. (which imports or manufactures in the Union), the hydro-fluorocarbons contained therein are considered in the unit system of the Union referred to in Chapter IV of EU Regulation 517/2014 as they were placed on the market by a manufacturer or importer of hydrofluorocarbons to which Article 15 of EU Regulation 517/2014 applies.

Signed for and on behalf of: AERMEC S.p.A.

Bevilacqua (VR),

Marketing manager
Luigi Zucchi

A handwritten signature in black ink, appearing to read 'Luigi Zucchi'.

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1 PRODUCT DESCRIPTION

Air-cooled outdoor chiller designed to meet air conditioning needs in residential/commercial complexes or industrial applications. Outdoor units with high-efficiency screw compressors axial fans, microchannel external coils and plant side shell and tube heat exchanger. The base, the structure and the panels are made of galvanized steel treated with polyester paint RAL 9003.

FIELDS OF THE RANGE

Acoustic efficiency

In this new product range, chillers can be chosen between different noise levels. The different versions have been designed to identify the unit according to the intended use of the system.

Maximum adaptability

Integrated hydronic kit containing the main hydraulic components; available with various configurations with one or two pumps, high or low head, to obtain a solution that allows you to save money and to facilitate installation.

Version with desuperheater

In this configuration a coolant/water heat exchanger is added on the gas flow line. The exchanger is set i series before the condenser and is appropriately sized to guarantee the recovery of all or part of the heat produced, for the free production of hot water at a medium-high temperature for domestic or other uses.

2 CONFIGURATOR

Field	Description
1,2,3	NSM
4,5,6,7	Size 1402, 1602, 1802, 2002, 2202, 2352, 2502, 2652, 2802, 3002, 3202, 3402, 3602, 3902, 4202, 4502, 4802, 5202, 5602, 6002, 6402, 6503, 6703, 6903, 7203, 8403, 9603
8	Operating field ° Standard mechanic thermostatic valve (1) X Electronic thermostatic expansion valve (2) Y Low temperature mechanic thermostatic valve (3) Z Low temperature electronic thermostatic valve (3)
9	Model ° Cooling only C Motocondensing unit (4)
10	Heat recovery ° Without heat recovery D With desuperheater (5) T With total recovery (6)
11	Version ° Standard A High efficiency E Silenced high efficiency L Standard silenced N Silenced very high efficiency U Very high efficiency
12	Coils ° Aluminium microchannel I Copper-aluminium O Coated aluminium microchannel R Copper pipes-copper fins S Copper pipes-Tinned copper fins V Copper pieps-Coated aluminium fins
13	Fans ° Standard J Inverter M Oversized (7)
14	Power supply ° 400V~3 50Hz with fuses 2 230V~3 50Hz with fuses 4 230V~3 50Hz with magnet circuit breakers 5 500V~3 50Hz with fuses 8 400V~3 50Hz with magnet circuit breakers

Each exchanger is protected by an anti-freeze resistance.

Operating field

Full load operation is guaranteed with an outdoor temperature up to 50°C, depending on the size and version.

Aluminium microchannel coils

The microchannel condensing aluminum coils ensure high levels of efficiency, reduced quantities of refrigerant and lower unit weight. The treatment "O" available as configurator it ensures high resistance to corrosion even in the most aggressive environments.

Unit with 2/3 cooling circuits

Unit with 2/3 refrigerant circuits designed to provide maximum efficiency at full load, ensuring high efficiency at partial loads also and ensuring continuity in case one of the circuits stops.

Electronic expansion valve

The possibility to use electronic expansion valve, offers significant benefits, especially when the chiller is working with partial loads, increasing the energy efficiency of the unit.

■ As standard from size 5202÷6402 and 8403÷9603, optional for all other sizes.

Field	Description
9	500V~3 50Hz with magnet circuit breakers
15,16	Integrated hydronic kit
	Without hydronic kit
00	Without hydronic kit
	Kit with n° 1 pump
PA	Pump A
PB	Pump B
PC	Pump C
PD	Pump D
PE	Pump E
PF	Pump F
PG	Pump G
PH	Pump H
PI	Pump I
PJ	Pump J
	Pump n° 1 pump + stand-by pump
DA	Pump A + stand-by pump
DB	Pump B + stand-by pump
DC	Pump C + stand-by pump
DD	Pump D + stand-by pump
DE	Pump E + stand-by pump
DF	Pump F + stand-by pump
DG	Pump G + stand-by pump
DH	Pump H + stand-by pump
DI	Pump I + stand-by pump
DJ	Pump J + stand-by pump
	Kit with 2 pumps
TF	Double pump F
TG	Double pump G (8)
TH	Double pump H (8)
TI	Double pump I (8)
TJ	Double pump J (8)

(1) Water produced from 4 °C ÷ 15 °C

(2) Water produced from 4 °C ÷ 18 °C

(3) Water produced from 4 °C ÷ - 8 °C

(4) The motor condensing units are not configurable with option D and T, and with the integrated hydronic kit

(5) The temperature of the water in the heat exchanger inlet must never drop below 35°C.

(6) The models 1402° - 1602° - 1802° cannot have total recovery, which is available for all the other sizes and versions. If it is necessary to have total recovery as well as the hydronic kit, feasibility must be evaluated when ordering.

(7) The units from 2652 to 9603 in the version "om" and from 5202 to 6402 and unit 9603 version "L" and "A" are not available with increased fans "M"

(8) The unit from 5603 to 9603 can only have hydronic kit "TF - TG - TH - TI - TJ"

3 COMPATIBILITY WITH THE HYDRONIC KITS

Size	Version	Evaporator	Module	Hydronic kit with single pump										Hydronic kits with pump + stand-by pump										Hydronic kits with double-parallel pump (all pumps in operation)				
				PA	PB	PC	PD	PE	PF	PG	PH	PI	PJ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	TF	TG	TH	TI	TJ
				no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.
1402	°-L-A-E-U-N	1	1	1	1	1	1	1	1	1	1	1	*	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*	2	2	-	-	*
1602	°-L-A-E-U-N	1	1	1	1	1	1	1	1	1	1	1	*	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*	2	2	2	-	*
1802	°-L-A-E-U-N	1	1	1	1	1	1	1	1	1	1	1	*	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*	2	2	2	2	*
2002	°-L-A-E-U-N	1	1	1	1	1	1	1	1	1	1	1	*	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*	2	2	2	2	*
2202	°-L-A-E-U-N	1	1	1	1	1	1	1	1	1	1	1	*	-	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*	2	2	2	2	*
2352	°-L-A-E-U-N	1	1	-	1	1	1	1	1	1	1	1	*	-	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*	2	2	2	2	*
2502	°-L-A-E-U-N	1	1	-	-	1	1	1	1	1	1	1	*	-	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*	2	2	2	2	*
2652	°-L-A-E-U-N	1	1	-	-	1	1	1	1	1	1	1	*	-	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*	2	2	2	2	*
2802	°-L-A-E-U-N	1	1	-	-	1	1	1	1	1	1	1	*	-	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*	2	2	2	2	*
3002	°-L-A-E-U-N	1	1	-	-	1	1	1	1	1	1	1	*	-	-	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*	2	2	2	2	*
3202	°-L-A-E-U-N	1	1	-	-	-	1	1	1	1	1	1	*	-	-	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*	2	2	2	2	*
3402	°-L-A-E-U-N	1	1	-	-	-	1	1	1	1	1	1	*	-	-	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*	2	2	2	2	*
3602	°-L-A-E-U-N	1	1	-	-	-	1	1	1	1	1	1	*	-	-	-	1+1	1+1	1+1	1+1	1+1	1+1	*	2	2	2	2	*
3902	°-L-A-E-U-N	1	1	-	-	-	-	1	1	1	1	1	*	-	-	-	1+1	1+1	1+1	1+1	1+1	1+1	*	2	2	2	2	*
4202	°-L-A-E-U-N	1	1	-	-	-	-	1	1	1	1	1	*	-	-	-	1+1	1+1	1+1	1+1	1+1	1+1	*	2	2	2	2	*
4502	°-L-A-E-U	1	1	-	-	-	-	-	1	1	1	1	*	-	-	-	-	-	-	-	-	-	*	2	2	2	2	*
	N	2	2	-	-	-	-	-	2	2	2	2	*	-	-	-	-	-	2+2	2+2	2+2	2+2	*	4	4	4	4	*
4802	°-L-A-E-U	1	1	-	-	-	-	-	1	1	1	1	*	-	-	-	-	-	1+1	1+1	1+1	1+1	*	2	2	2	2	*
	N	2	2	-	-	-	-	-	2	2	2	2	*	-	-	-	-	-	2+2	2+2	2+2	2+2	*	4	4	4	4	*
5202	°-L-A-E-U	1	1	-	-	-	-	-	1	1	1	1	*	-	-	-	-	-	1+1	1+1	1+1	1+1	*	2	2	2	2	*
	N	2	2	-	-	-	-	-	2	2	2	2	*	-	-	-	-	-	2+2	2+2	2+2	2+2	*	4	4	4	4	*
5602	°-L-A	1	1	-	-	-	-	-	1	1	1	1	*	-	-	-	-	-	1+1	1+1	1+1	1+1	*	2	2	2	2	*
	E-U-N	2	2	-	-	-	-	-	2	2	2	2	*	-	-	-	-	-	2+2	2+2	2+2	2+2	*	4	4	4	4	*
6002	°-L-A	1	1	-	-	-	-	-	1	1	1	1	*	-	-	-	-	-	1+1	1+1	1+1	1+1	*	2	2	2	2	*
	E-U-N	2	2	-	-	-	-	-	2	2	2	2	*	-	-	-	-	-	2+2	2+2	2+2	2+2	*	4	4	4	4	*
6402	°-L-A	1	1	-	-	-	-	-	1	1	1	1	*	-	-	-	-	-	1+1	1+1	1+1	1+1	*	2	2	2	2	*
	E-U-N	2	2	-	-	-	-	-	2	2	2	2	*	-	-	-	-	-	2+2	2+2	2+2	2+2	*	4	4	4	4	*
6503	°	1	1	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	*	2	2	2	2	*
	L-A-E-U-N	2	2	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	*	3	3	3	3	*
6703	°	1	1	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	*	2	2	2	2	*
	L-A-E-U-N	2	2	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	*	3	3	3	3	*
6903	°	1	1	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	*	2	2	2	2	*
	L-A-E-U-N	2	2	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	*	3	3	3	3	*
7203	°	1	1	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	*	2	2	2	2	*
	L-A-E-U	2	2	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	*	3	3	3	3	*
8403	°	1	1	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	*	2	2	2	2	*
	L-A	2	2	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	*	3	3	3	3	*
9603	°	1	1	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	*	2	2	2	2	*
	L-A	2	2	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	*	3	3	3	3	*

■ * For all configurations including pump J please contact the factory.

4 WEIGHTS OF PUMPING UNITS

	PA	PB	PC	PD	PE	PF	PG	PH	PI	PJ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	TF	TG	TH	TI	TJ
Empty weight (kg)	105	133	138	147	171	189	202	256	267	276	150	179	189	207	250	301	319	413	435	453	301	319	413	435	453
Water volume (m³)	18	27	27	27	27	27	27	40	40	40	18	27	27	27	27	27	27	40	40	40	27	27	40	40	40
Total weight (kg)	123	160	165	174	198	216	229	296	307	316	168	206	216	234	277	328	346	453	475	493	328	346	453	475	493

5 UNIT COMPONENTS DESCRIPTION

REFRIGERANT CIRCUIT

Compressors

Compressor with semi-hermetic screw with two rotors.
Oil flow induced by the pressure difference, therefore avoiding the aid of the dedicated pump, studied especially to guarantee a constant and uniform lubrication of the bearings in any compressor work state, both in full and partial load.
Oil separator incorporated with the use of a steel mesh filter that ensures constant presence of oil in the compressor.
Partialisation of the cooling capacity via slide valve which, depending on the position assumed, determines a stepless reduction of the compression chamber, can modulate continuously from 100% to 25% of its capacity.
Each compressor has

- Circuit breaker protection (Fuses) of the motor;
- Discharge temperature and oil level check;
- Electric resistance for heating the sump with compressor at a standstill.

The resistance is powered automatically when the unit stops, as long as it is live.

Microchannel coils

The full range uses aluminium microchannel coils, ensuring very high levels of efficiency.
This allows using less refrigerant compared to traditional copper coils.

System side heat exchanger

Shell and tube exchanger type with dry expansion, suitably dimensioned to obtain high performance.
Steel housing with closed cell foam elastomer anti-condensation cladding.
The shell and tube is made from copper pipes with a special profile that allows high exchange associated to efficient draining.
An anti-freeze electric heater can be fitted on request (this accessory can only be installed in the factory) to protect the heat exchanger against outside temperatures down to -20°C and avoid the formation of ice in stand-by mode.
With the unit running, the protection is ensured by the output water temperature probe.

Filter drier

Hermetic-mechanical made of hygroscopic material, able to withhold impurities and any traces of humidity present in the cooling circuit.

Sight glass

It is used to verify that the expansion system is powered correctly and the presence of humidity in the cooling circuit.

Mechanic thermostatic valve

The mechanical type valve, with external equaliser located at the evaporator outlet, modulates the flow of refrigerant into the evaporator based on the load and ensures the correct superheat of the suction gas.

Electronic thermostatic expansion valve

Compared with a mechanical thermostatic valve, the electronic one offers better overheating control so the evaporator is used more efficiently in all conditions, thereby boosting machine output.
Its use in comfort dedicated applications allows to make substantial benefits especially in the presence of varying loads, because it allows you to maintain the maximum efficiency with any external air temperature.
In industrial applications, where there is often a need to make temperature changes in a wide range of environmental conditions, the use of the electronic valve is ideal because it avoids the need for continuous calibration, adapting the system to different load conditions and hence making it independent.

Flow shut-off valves

Present on liquid and pressing line to interrupt the refrigerant in the case of extraordinary maintenance.

Solenoid valves

The valves close when the compressor switches off, blocking the flow of refrigerant gas to the evaporator, recovery and the coil.

HYDRAULIC CIRCUIT (VERSIONS WITH HYDRONIC KIT)

Pump

They provide useful static pressure to the system, excluding the unit pressure drops.

■ *If the stand-by pump or a parallel double pump is fitted, it must be managed manually.*

Expansion vessel

Membrane type precharged with nitrogen.

Pressure gauge

Measures the pressure in the hydraulic circuit.

Pressure relief valve

Calibrated at 6 Bar and drain pipe, it activates by discharging overpressure if abnormal pressure occurs.

Air drain valve

Mounted at the highest level of the hydraulic system. The air vent is used for the release of any air pockets from the hydraulic circuit.

STRUCTURE AND FANS

Structure

Supporting structure for outdoor installation, in hot-dipped galvanized sheet steel, with RAL 9003 polyester powder coating.
Designed to ensure the maximum access for service and maintenance.

Standard fan unit

Equipped with accident-prevention net, it consists of axial fans and 6-pole motor with external rotor and protection rating IP54.
Moreover, the motor is equipped with inner thermal protection with automatic reset.

Inverter fans

Continuous modulation of revolution speed according to the condensation pressure, highly efficient brushless motor for low energy consumption.

CONTROL AND SAFETY COMPONENTS

Differential pressure switch

Located between the inlet and outlet of the evaporator.
Checks that water is circulating in the heat exchanger, and stops the unit if this is not the case.

Low pressure transducer

Placed on low pressure side of cooling circuit, it signals the work pressure to the control board, generating a pre-warning in case abnormal pressure occurs.

High pressure transducer

Placed on the high pressure side of the cooling circuit, signals the work pressure to control board, generating a pre-warning in case abnormal pressure occurs.

Double high pressure switch

With fixed calibration, placed on the high pressure side of the cooling circuit, it inhibits the operation of the compressor if abnormal work pressure occurs.

■ *Double = manual + tool*

Pressure relief valve for cooling circuit

On the low pressure branch, the pressure relief valve is calibrated at 16.5 bar or 16 bar.

On the high pressure branch, the pressure relief valve is calibrated at 22 bar.

ELECTRICAL CONTROL AND POWER PANEL

Complete with:

- door interlocked isolator
- Magnet circuit breakers and contactors for compressors and fans
- external electrical panel
- electronic controller
- All numbered cables

Door interlocked isolator

Access to the electrical panel is by operating the handle of the door interlocked isolator which removes power to the unit.
To avoid accidentally powering up the unit during maintenance the isolator is fitted with a locking mechanism.

Controller keypad

Allows complete control of the unit.
For further information refer to the user manual.

Electronic controller

The electronic adjustment consists of several control boards, one for each compressor, connected to each other in a network and a control panel with display.

For models with more compressors, the board controlling compressor n° 1 is the "MASTER" board, while the others are "SLAVE".

Relative to the compressor that controls, transducers, loads and alarms are connected to every board, while only the machine general ones are connected to the "MASTER" board.

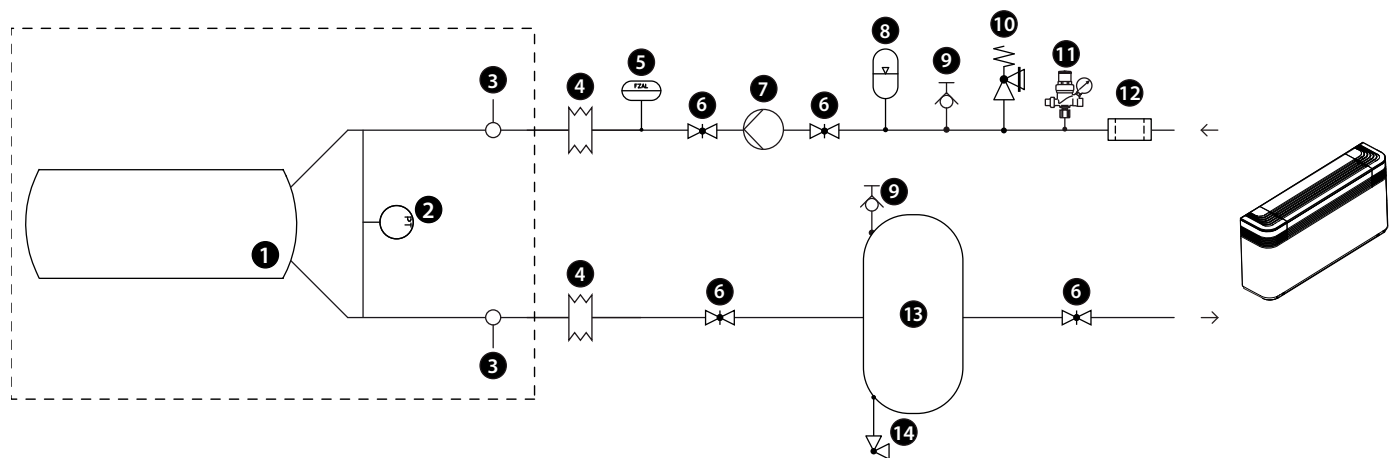
Microprocessor

- Remote on/off with voltage-free external contact
- Multi-language menu
- Phase sequence control
- Separate control of the individual compressors
- Amperometric transformer
- Cumulative faults block signal
- Historical alarms function
- Daily/weekly programming
- Inlet/outlet water temperature display
- Alarms display
- Integral proportional regulation on the temperature of the output water
- Programmable timer function
- Function with double calibration point linked to an external contact
- Fan adjustment
- Can be interfaced with Modbus protocol (accessory)
- Pump/s control
- Compressors rotation management
- Analogue input from 4 to 20 mA
- External air temperature probe
- "Always Working" function in the case of critical conditions (e.g. an environmental temperature that is too high) the machine does not stop but can adjust itself and supply the maximum power in those conditions
- "Switching Hysteresis" self-adapting work differential to always ensure the correct work times of the compressors even in systems with low water content or insufficient flow rate. This system decreases wear of the compressors.
- AFFP "Anti-Freezing Fan Protection" system that periodically switches the fans on when external temperatures are very low
- PDC "Pull Down Control" system to prevent the activation of power steps when the water temperature quickly approaches the set-point. Optimises machine functioning when working normally and in the presence of load variations, ensuring the best machine efficiency in all conditions.

■ For further information refer to the user manual.

6 MAIN HYDRAULIC CIRCUITS

WITHOUT HYDRONIC KIT



Components as standard

- 1 Shell and tube heat exchanger
- 2 Differential pressure switch
- 3 Water temperature sensors (IN/OUT)

Components not provided and responsibility of the installer

- 4 Anti-vibration joints
- 5 Flow switch (MANDATORY)
- 6 Flow shut-off valves

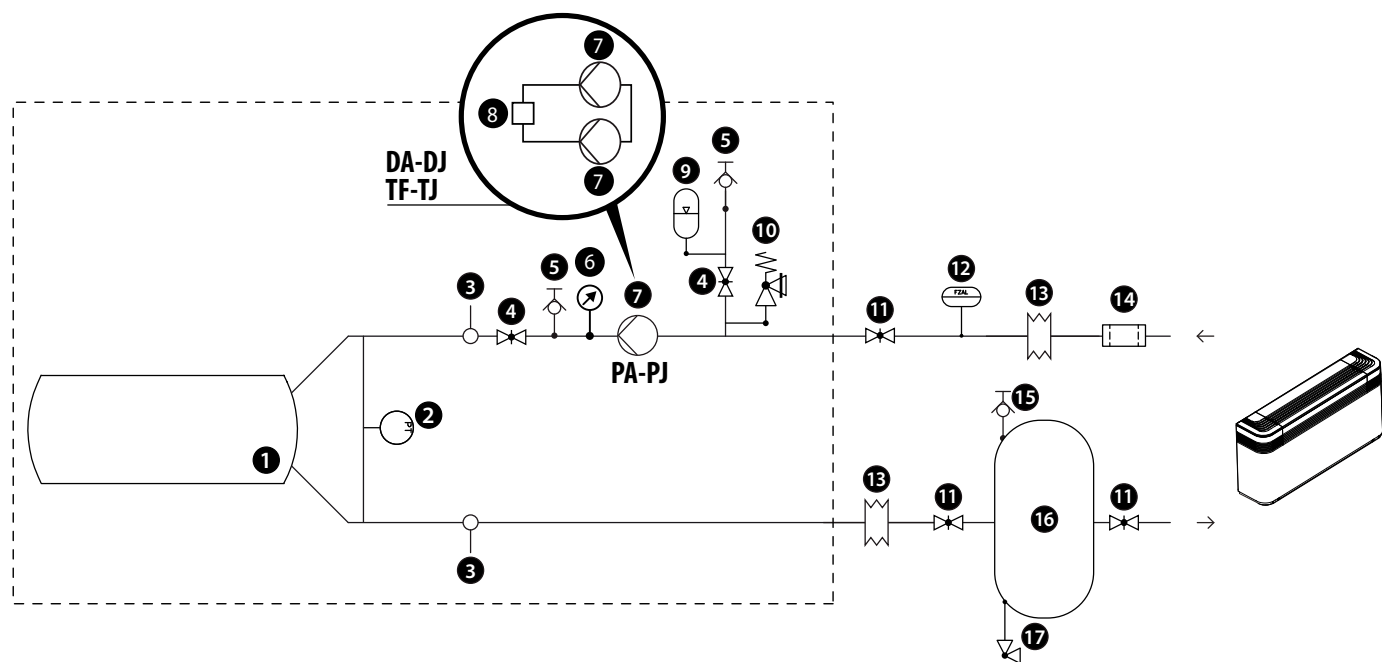
- 7 Pump
- 8 Expansion vessel
- 9 Air drain valve
- 10 Pressure relief valve
- 11 Loading unit
- 12 Water filter (MANDATORY)
- 13 Storage tank
- 14 Drain valve

Water characteristics

System: Chiller with shell and tube exchanger	
PH	6,8 - 8
Electric conductivity	< 800 µS/cm
Total hardness (CaCO ₃)	< 200 ppm
Total dissolved solids	< 15000 ppm
Max. solid particles dimension	0,5 mm
Max. glycol amount	50 %
Iron (Fe)	< 1 ppm
Copper (Cu)	< 1 ppm
Alkalinity (CaCO ₃)	< 100 ppm
Chloride ions (Cl ⁻)	< 150 ppm
Sulphate ions (SO ₄ ²⁻)	< 100 ppm
Sulphide ions (S ⁻)	None
Ammonium ions (NH ₄ ⁺)	< 1 ppm
Silica (SiO ₂)	< 50 ppm
Silica (SiO ₂)	< 30 ppm

NOTE: Always provide a water filter upstream (inlet) of the heat exchanger. In order to ensure the limits of acceptability of the water, it is recommended to use a filter with N25 mesh (French numbering), mesh size 0.87 mm.

WITH PUMPS



Components as standard

- 1 Shell and tube heat exchanger
- 2 Differential pressure switch
- 3 Water temperature sensors (IN/OUT)
- 4 Flow shut-off valves
- 5 Air drain valve
- 6 Pressure gauge
- 7 Pump PA-PJ (2 pumps DA-DJ and TF-TJ)
- 8 Clapet valve (hydraulic kits DA-DJ and TF-TJ)
- 9 Expansion vessel

- 10 Pressure relief valve

Components not provided and responsibility of the installer

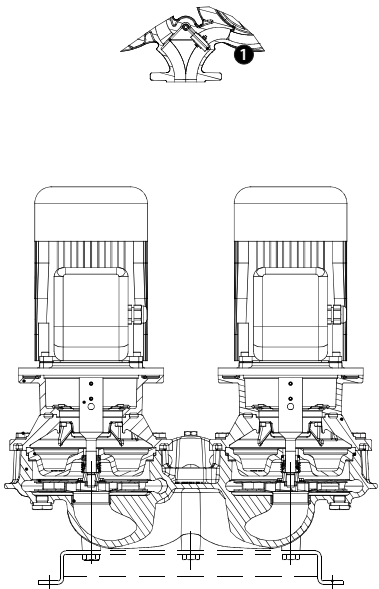
- 11 Flow shut-off valves
- 12 Flow switch (MANDATORY)
- 13 Anti-vibration joints
- 14 Water filter (MANDATORY)
- 15 Air drain valve
- 16 Storage tank
- 17 Drain valve

Water characteristics

System: Chiller with shell and tube exchanger	
PH	6,8 - 8
Electric conductivity	< 800 µS/cm
Total hardness (CaCO ₃)	< 200 ppm
Total dissolved solids	< 15000 ppm
Max. solid particles dimension	0,5 mm
Max. glycol amount	50 %
Iron (Fe)	< 1 ppm
Copper (Cu)	< 1 ppm
Alkalinity (CaCO ₃)	< 100 ppm
Chloride ions (Cl ⁻)	< 150 ppm
Sulphate ions (SO ₄ ²⁻)	< 100 ppm
Sulphide ions (S ⁻)	None
Ammonium ions (NH ₄ ⁺)	< 1 ppm
Silica (SiO ₂)	< 50 ppm
Silica (SiO ₂)	< 30 ppm

NOTE: Always provide a water filter upstream (inlet) of the heat exchanger. In order to ensure the limits of acceptability of the water, it is recommended to use a filter with N25 mesh (French numbering), mesh size 0.87 mm.

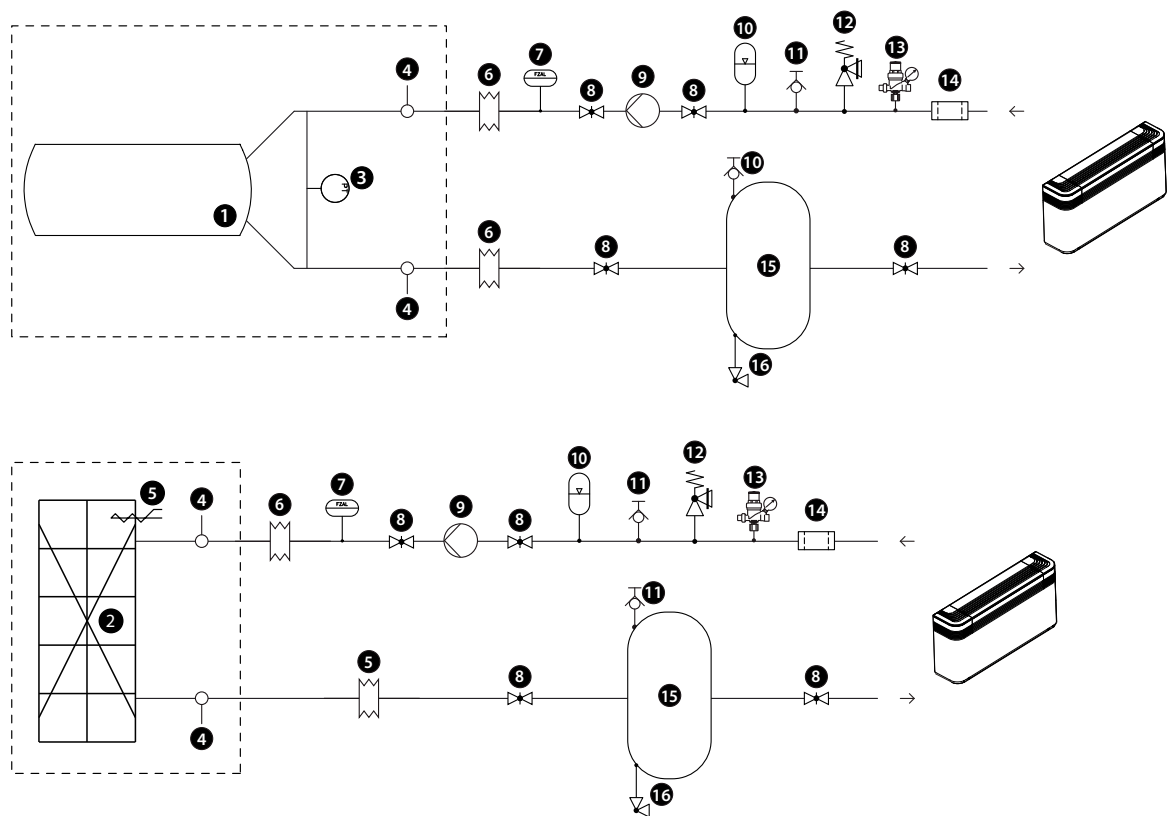
Clapet valve



1 Clapet valve

The unit with double pump circuit does not have one-way valves. If you choose to install two units in parallel or in cascade, it is recommended to provide one-way valves for the correct operation of the unit.

WITH DESUPERHEATER



Components as standard

- 1 Shell and tube heat exchanger
- 2 Plate heat exchanger (desuperheater)
- 3 Differential pressure switch
- 4 Water temperature sensors (IN/OUT)
- 5 Antifreeze electric heater

Components not provided and responsibility of the installer

- 6 Anti-vibration joints
- 7 Flow switch (MANDATORY)

- 8 Flow shut-off valves
- 9 Pump
- 10 Expansion vessel
- 11 Air drain valve
- 12 Pressure relief valve
- 13 Loading unit
- 14 Water filter (MANDATORY)
- 15 Storage tank
- 16 Drain valve

Water characteristics with shell and tube heat exchanger

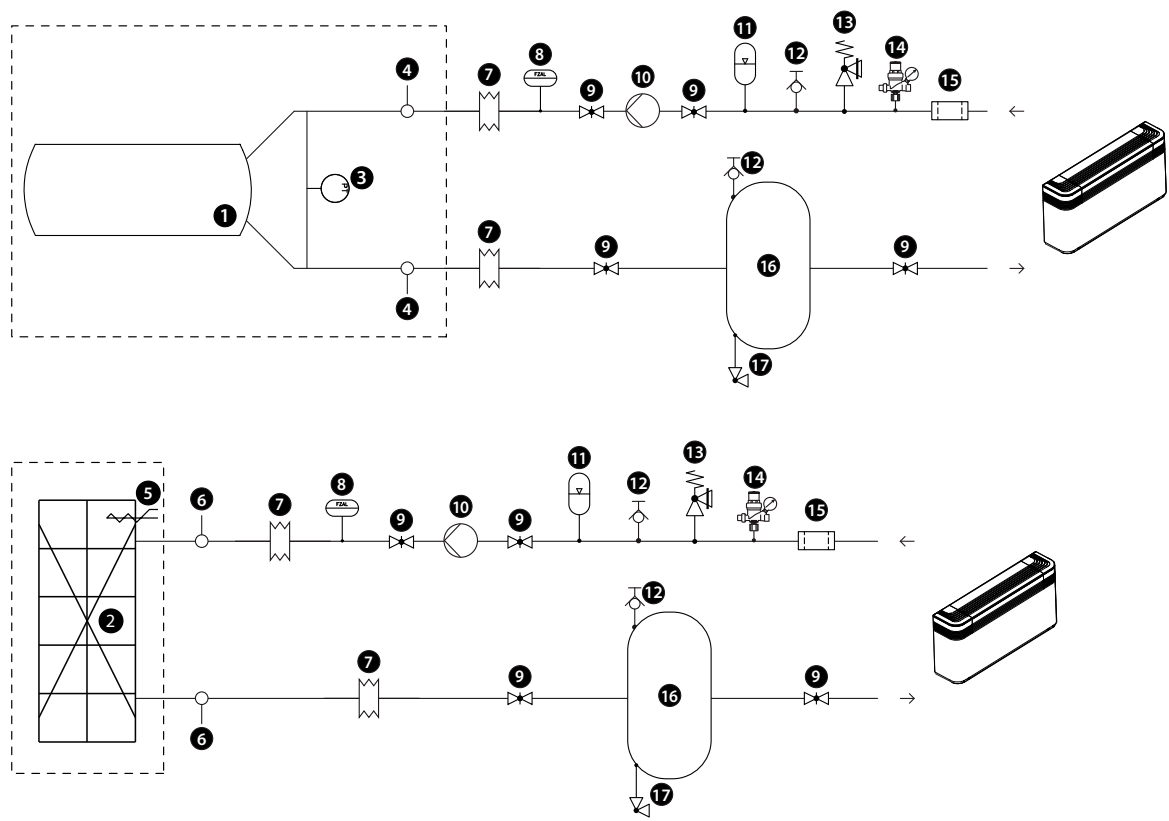
System: Chiller with shell and tube exchanger	
PH	6,8 - 8
Electric conductivity	< 800 µS/cm
Total hardness (CaCO ₃)	< 200 ppm
Total dissolved solids	< 15000 ppm
Max. solid particles dimension	0,5 mm
Max. glycol amount	50 %
Iron (Fe)	< 1 ppm
Copper (Cu)	< 1 ppm
Alkalinity (CaCO ₃)	< 100 ppm
Chloride ions (Cl ⁻)	< 150 ppm
Sulphate ions (SO ₄ ²⁻)	< 100 ppm
Sulphide ions (S ⁻)	None
Ammonium ions (NH ₄ ⁺)	< 1 ppm
Silica (SiO ₂)	< 50 ppm
Silica (SiO ₂)	< 30 ppm

Water characteristics with plate heat exchanger

System: Chiller with plate heat exchanger	
PH	7,5 - 9
Total hardness	4,5 - 8,5 °dH
Temperature	< 65 °C
Oxygen content	< 0,1 ppm
Max. glycol amount	50 %
Phosphates (PO ₄)	< 2ppm
Manganese (Mn)	< 0,05 ppm
Iron (Fe)	< 0,3 ppm
Alkalinity (HCO ₃)	70 - 300 ppm
Chloride ions (Cl ⁻)	< 50 ppm
Sulphate ions (SO ₄)	< 50 ppm
Sulphide ion (S)	None
Ammonium ions (NH ₄)	None
Silica (SiO ₂)	< 30 ppm

NOTE: Always provide a water filter upstream (inlet) of the heat exchanger. In order to ensure the limits of acceptability of the water, it is recommended to use a filter with N25 mesh (French numbering), mesh size 0.87 mm.

WITH TOTAL RECOVERY



Components as standard

- 1 Shell and tube heat exchanger
- 2 Plate heat exchanger (total recovery)
- 3 Differential pressure switch
- 4 Water temperature sensors (IN/OUT)
- 5 Antifreeze electric heater

Components not provided and responsibility of the installer

- 6 Water temperature sensors (IN/OUT)
- 7 Anti-vibration joints
- 8 Flow switch (MANDATORY)

- 9 Flow shut-off valves
- 10 Pump
- 11 Expansion vessel
- 12 Air drain valve
- 13 Pressure relief valve
- 14 Loading unit
- 15 Water filter (MANDATORY)
- 16 Storage tank
- 17 Drain valve

Water characteristics with shell and tube heat exchanger

System: Chiller with shell and tube exchanger	
PH	6,8 - 8
Electric conductivity	< 800 µS/cm
Total hardness (CaCO ₃)	< 200 ppm
Total dissolved solids	< 15000 ppm
Max. solid particles dimension	0,5 mm
Max. glycol amount	50 %
Iron (Fe)	< 1 ppm
Copper (Cu)	< 1 ppm
Alkalinity (CaCO ₃)	< 100 ppm
Chloride ions (Cl ⁻)	< 150 ppm
Sulphate ions (SO ₄ ²⁻)	< 100 ppm
Sulphide ions (S ⁻)	None
Ammonium ions (NH ₄ ⁺)	< 1 ppm
Silica (SiO ₂)	< 50 ppm
Silica (SiO ₂)	< 30 ppm

Water characteristics with plate heat exchanger

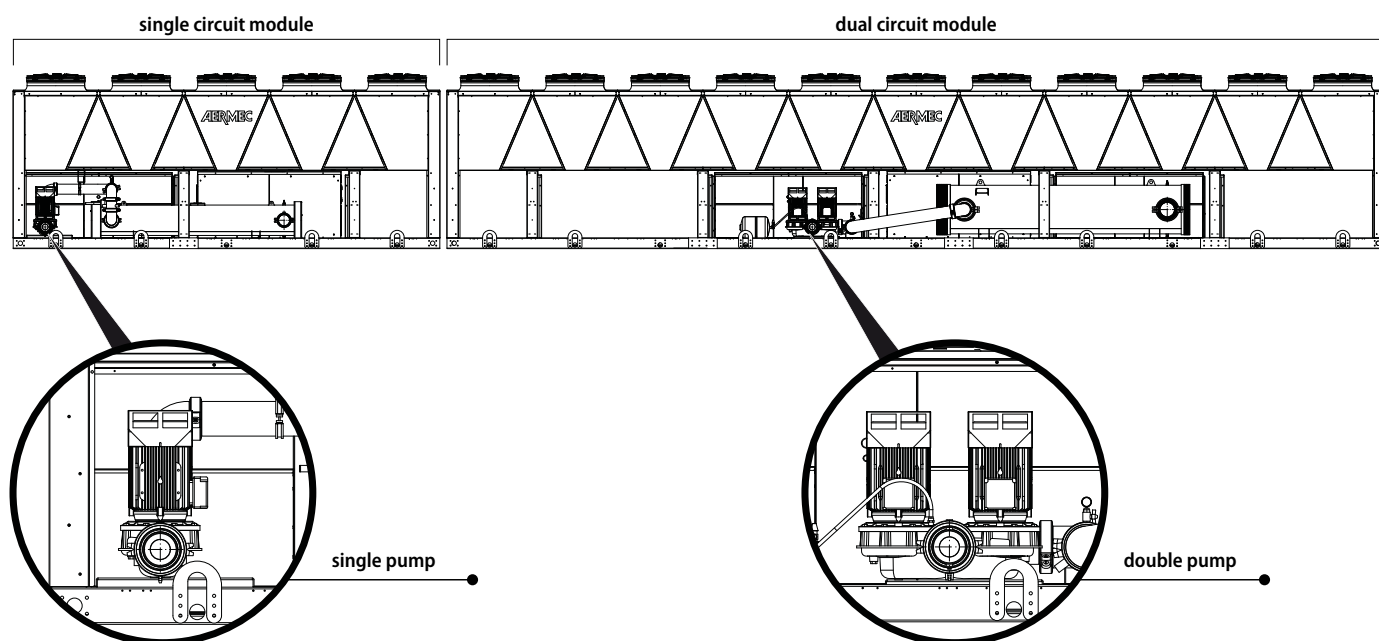
System: Chiller with plate heat exchanger	
PH	7,5 - 9
Total hardness	4,5 - 8,5 °dH
Temperature	< 65 °C
Oxygen content	< 0,1 ppm
Max. glycol amount	50 %
Phosphates (PO ₄)	< 2ppm
Manganese (Mn)	< 0,05 ppm
Iron (Fe)	< 0,3 ppm
Alkalinity (HCO ₃)	70 - 300 ppm
Chloride ions (Cl ⁻)	< 50 ppm
Sulphate ions (SO ₄)	< 50 ppm
Sulphide ion (S)	None
Ammonium ions (NH ₄)	None
Silica (SiO ₂)	< 30 ppm

NOTE: Always provide a water filter upstream (inlet) of the heat exchanger. In order to ensure the limits of acceptability of the water, it is recommended to use a filter with N25 mesh (French numbering), mesh size 0.87 mm.

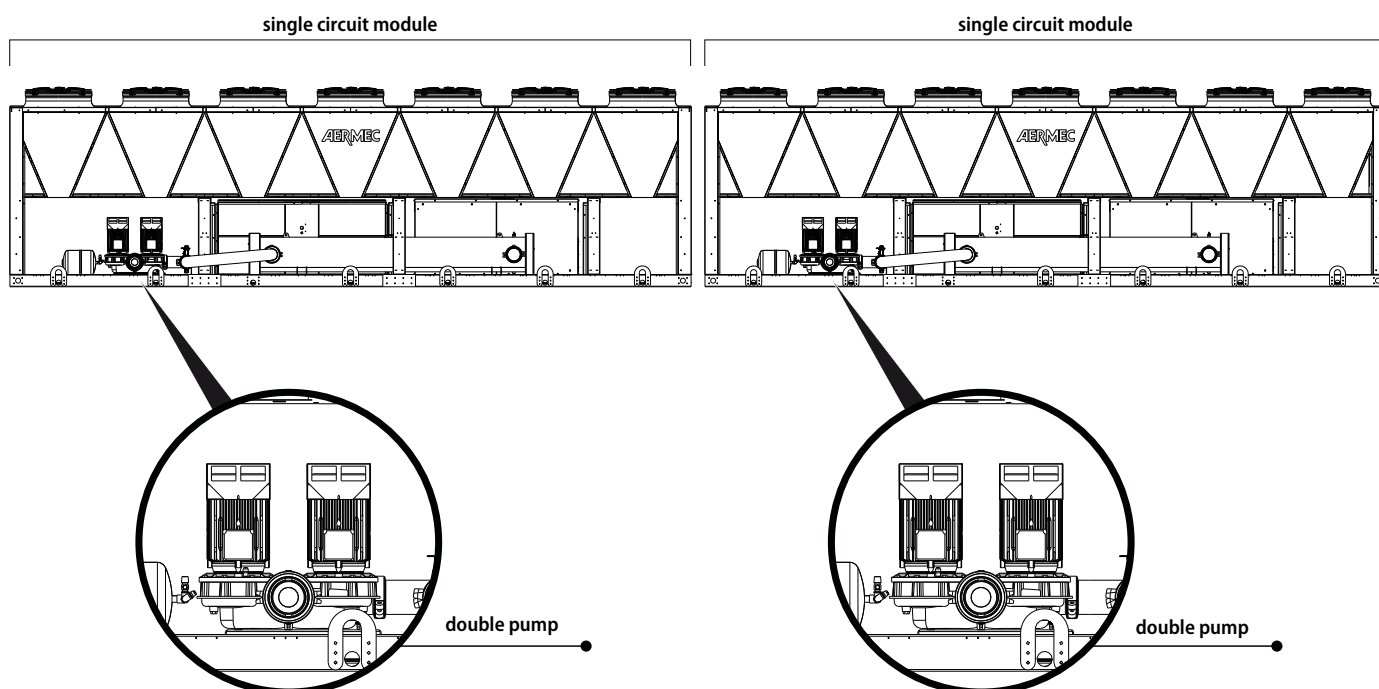
7 POSITION OF PUMPS IN PARALLEL

HYDRONIC KIT (TF-TG-TH-TI-TJ)

Example of a three-circuit bimodule unit



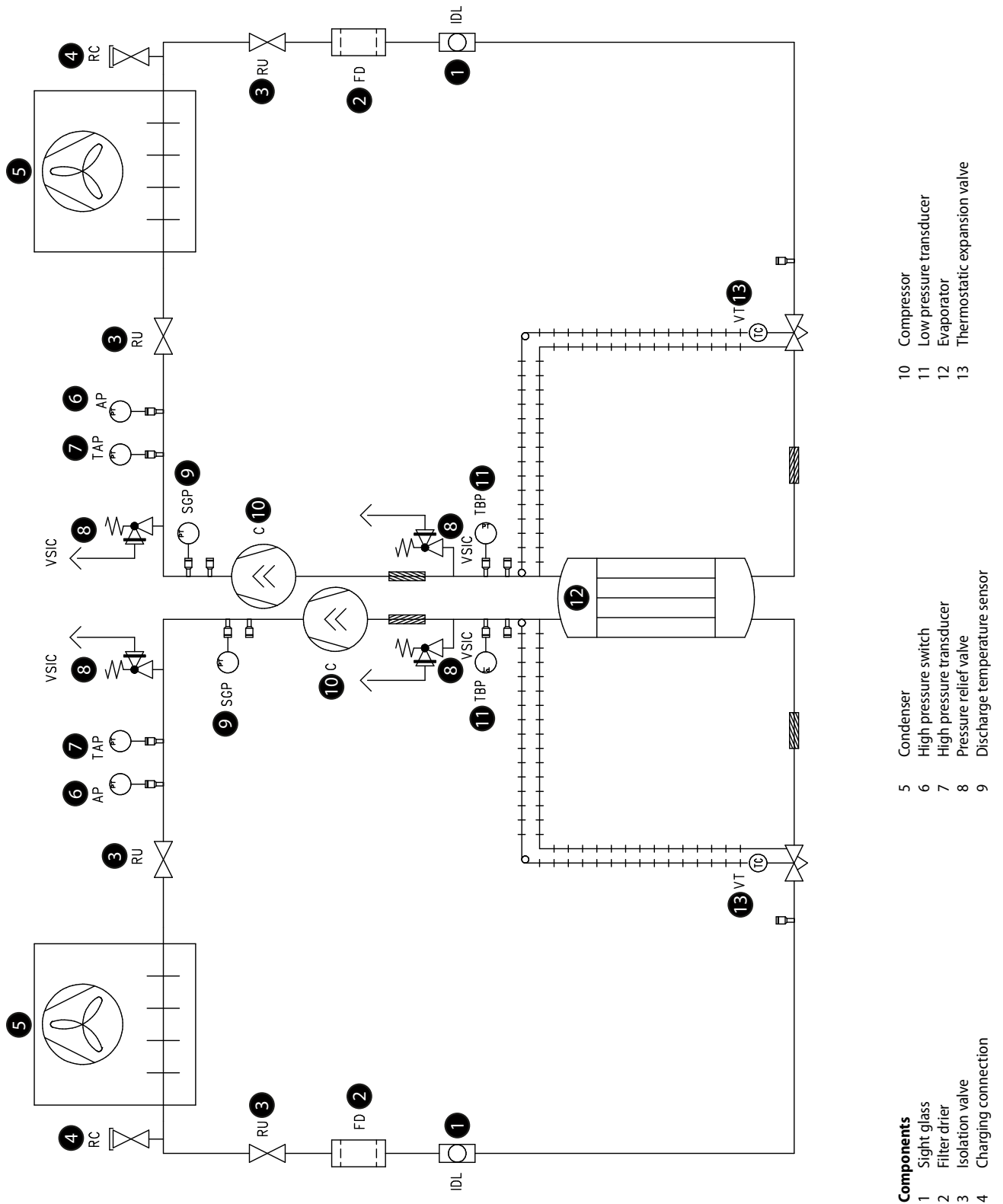
Example of a two-circuit bimodule unit



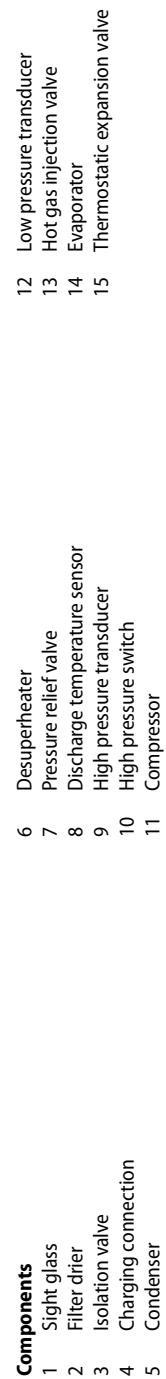
8 MAIN COOLING REFRIGERANT LAYOUTS

REFRIGERANT CIRCUIT

■ Double circuit model

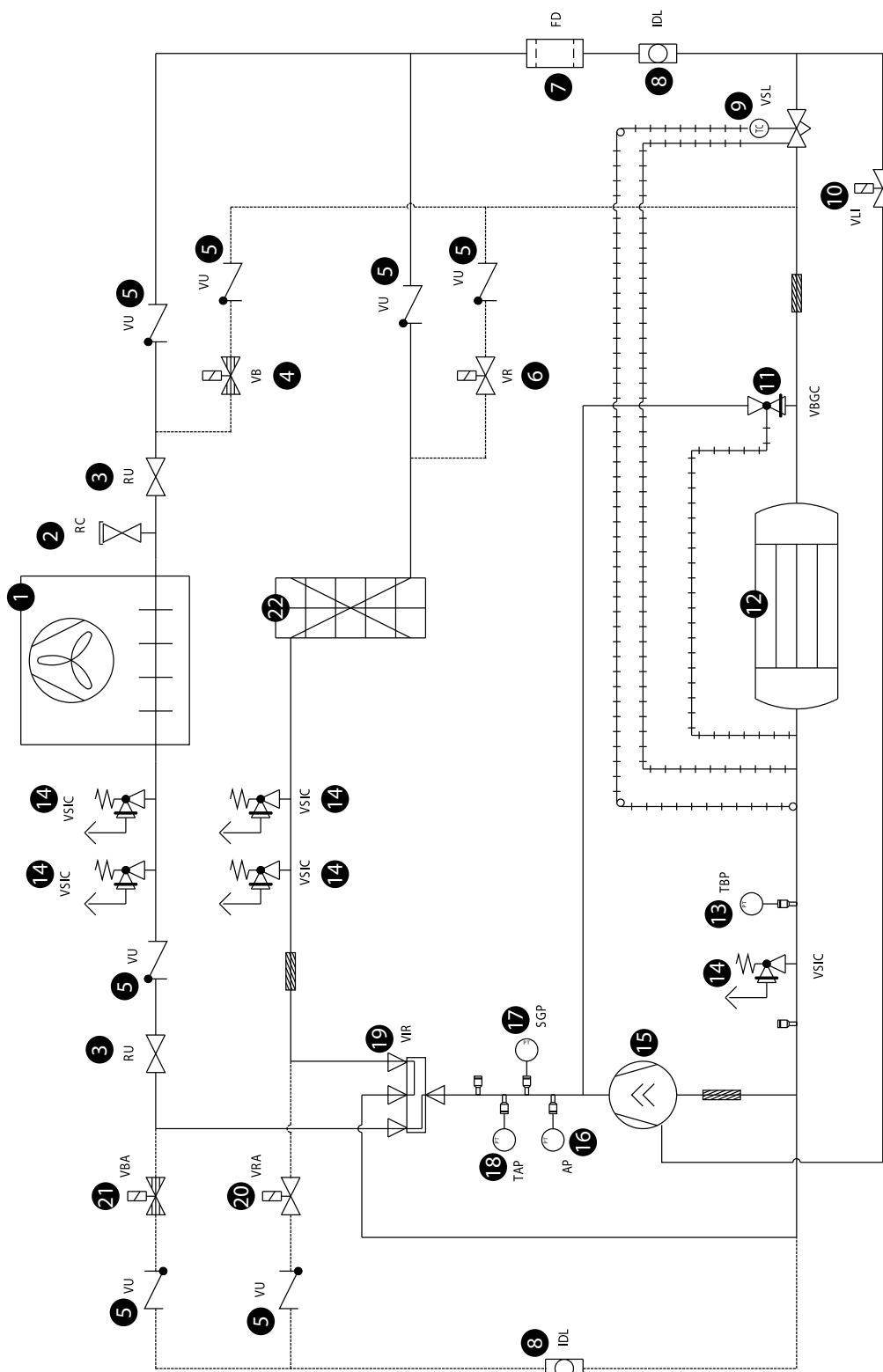


Double circuit model



COOLING CIRCUIT WITH TOTAL RECOVERY

Single circuit model



Components

- | Components | |
|------------|---|
| 1 | Condenser |
| 2 | Charging connection |
| 3 | Isolation valve |
| 4 | Solenoid valve for bleeding the coil liquid |
| 5 | One-way valve |
| 6 | Solenoid valve for bleeding the heat recovery unit liquid |
| 7 | Filter drier |

- | | |
|----|--------------------------|
| 8 | Sight glass |
| 9 | Thermal expansion valve |
| 10 | Injection solenoid valve |
| 11 | Hot gas injection valve |
| 12 | Evaporator |
| 13 | Low pressure transducer |
| 14 | Pressure relief valve |
| 15 | Compressor |

- | | |
|----|---|
| 16 | High pressure switch |
| 17 | Discharge temperature sensor |
| 18 | High pressure transducer |
| 19 | 4-way cycle inversion valve |
| 20 | Solenoid valve for bleeding the heat recovery unit discharge liquid |
| 21 | Solenoid valve for bleeding the coil discharge liquid |
| 22 | Total recovery |

9 ACCESSORIES

AER485P1 x n° 2: RS-485 interface for supervision systems with MODBUS protocol.
AER485P1 x n° 3: RS-485 interface for supervision systems with MODBUS protocol.
AERBACP: Ethernet communication Interface for protocols Bacnet/IP, Modbus TCP/IP, SNMP
AERNET: The device allows the control, the management and the remote monitoring of a Chiller with a PC, smartphone or tablet using Cloud connection. AERNET works as Master while every unit connected is configured as Slave (max. 6 unit); also, with a simple click is possible to save a log file with all the connected unit datas in the personal terminal for post analysis.
MULTICHILLER_EVO: Control, switch-on and switch-off system of the single chillers where multiple units are installed in parallel, always ensuring constant flow rate to the evaporators.

PRV3: Allows you to control the chiller at a distance.
DCPX: Device for condensation temperature control, with continuous speed modulation of fans by using a pressure transducer.
AVX: Spring anti-vibration supports.

FACTORY FITTED ACCESSORIES

RIF: Power factor correction. Connected in parallel to the motor allowing about 10% reduction of input current.
GP_: Anti-intrusion grid kit
KRS: Electric heater for the heat exchanger

ACCESSORIES COMPATIBILITY

Accessories

Model	Ver	1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
AER485P1 x n° 2 (1)	°A,E,L,N,U	*	*	*	*	*	*	*	*	*	*	*	*	*	*
AERBACP	°A,E,L,N,U	*	*	*	*	*	*	*	*	*	*	*	*	*	*
AERNET	°A,E,L,N,U	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MULTICHILLER_EVO	°A,E,L,N,U	*	*	*	*	*	*	*	*	*	*	*	*	*	*
PRV3	°A,E,L,N,U	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Model	Ver	4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
AER485P1 x n° 2 (1)	°A,E,L,N,U	*	*	*	*	*	*	*						
AER485P1 x n° 3 (1)	°A,L								*	*	*	*	*	*
	E,U								*	*	*	*	*	*
	N							*						
AERBACP	°A,L	*	*	*	*	*	*	*	*	*	*	*	*	*
	E,U	*	*	*	*	*	*	*	*	*	*	*	*	*
	N	*	*	*	*	*	*	*						
AERNET	°A,L	*	*	*	*	*	*	*	*	*	*	*	*	*
	E,U	*	*	*	*	*	*	*	*	*	*	*	*	*
	N	*	*	*	*	*	*	*						
MULTICHILLER_EVO	°A,L	*	*	*	*	*	*	*	*	*	*	*	*	*
	E,U	*	*	*	*	*	*	*	*	*	*	*	*	*
	N	*	*	*	*	*	*	*						
PRV3	°A,L	*	*	*	*	*	*	*	*	*	*	*	*	*
	E,U	*	*	*	*	*	*	*	*	*	*	*	*	*
	N	*	*	*	*	*	*	*						

(1) x Indicates the quantity of accessories to match.

Condensation control temperature

Ver	1402	1602	1802	2002	2202	2352	2502	2652	2802	3002
Fans: °										
°	DCPX100	DCPX100	DCPX100	DCPX101	DCPX101	DCPX101	DCPX101	DCPX111	DCPX111	DCPX112
A	DCPX101	DCPX101	DCPX101	DCPX101	DCPX102	DCPX102	DCPX102	DCPX103	DCPX103	DCPX103
E,L,N	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard
U	DCPX101	DCPX101	DCPX102	DCPX102	DCPX102	DCPX103	DCPX103	DCPX104	DCPX104	DCPX104
Fans: M										
°	DCPX110	DCPX110	DCPX110	DCPX110	DCPX110	DCPX110	DCPX110	-	-	-
A	DCPX111	DCPX111	DCPX111	DCPX111	DCPX112	DCPX112	DCPX112	DCPX113	DCPX113	DCPX113
E,L,N	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard
U	DCPX111	DCPX111	DCPX112	DCPX112	DCPX113	DCPX113	DCPX114	DCPX114	DCPX114	DCPX114

Ver	3202	3402	3602	3902	4202	4502	4802	5202	5602	6002
Fans: °										
°	DCPX112	DCPX112	DCPX112	DCPX113	DCPX113	DCPX114	DCPX114	DCPX115	DCPX115	DCPX115
A	DCPX103	DCPX104	DCPX104	DCPX105	DCPX105	DCPX106	DCPX106	DCPX116	DCPX117	DCPX118
E,L,N	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard
U	DCPX104	DCPX105	DCPX105	DCPX106	DCPX107	DCPX107	DCPX108	DCPX109	DCPX120	DCPX121
Fans: M										
A	DCPX113	DCPX114	DCPX114	DCPX115	DCPX115	DCPX116	DCPX116	-	-	-
E,N	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard
L	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard	-	-
U	DCPX114	DCPX115	DCPX115	DCPX116	DCPX117	DCPX117	DCPX118	DCPX119	DCPX130	DCPX131

Ver	6402	6503	6703	6903	7203	8403	9603
Fans: °							
°	DCPX116	DCPX135+DCPX113	DCPX135+DCPX113	DCPX125+DCPX114	DCPX114+DCPX136	DCPX114+DCPX136	DCPX114+DCPX136
A	DCPX118	DCPX105+DCPX126	DCPX105+DCPX126	DCPX106+DCPX126	DCPX106+DCPX126	DCPX107+DCPX126	DCPX118+DCPX137
E	As standard	As standard	As standard	As standard	As standard	-	-
L	As standard	As standard	As standard	As standard	As standard	As standard	As standard
N	As standard	As standard	-	-	-	-	-
U	DCPX122	DCPX106+DCPX127	DCPX107+DCPX127	DCPX107+DCPX127	DCPX108+DCPX127	-	-
Fans: M							
A	-	DCPX115+DCPX136	DCPX115+DCPX136	DCPX111	DCPX116+DCPX136	DCPX117+DCPX136	-
E	As standard	As standard	As standard	As standard	As standard	-	-
L	-	As standard	As standard	As standard	As standard	As standard	-
N	As standard	As standard	-	-	-	-	-
U	DCPX132	DCPX116+DCPX137	DCPX117+DCPX137	DCPX117+DCPX137	DCPX118+DCPX137	-	-

Antivibration

Ver	1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Integrated hydronic kit: 00, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, TF, TG, TH, TI, TJ														
°	AVX900	AVX900	AVX900	AVX904	AVX904	AVX904	AVX904	AVX904	AVX904	AVX959	AVX959	AVX960	AVX960	AVX911
A,L	AVX901	AVX901	AVX901	AVX904	AVX959	AVX959	AVX959	AVX903	AVX903	AVX903	AVX903	AVX909	AVX909	AVX907
E,U	AVX901	AVX901	AVX959	AVX959	AVX959	AVX903	AVX903	AVX906	AVX906	AVX906	AVX906	AVX907	AVX907	AVX912
N	AVX959	AVX959	AVX903	AVX903	AVX903	AVX906	AVX906	AVX907	AVX907	AVX907	AVX907	AVX912	AVX910	AVX913
Ver	4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603	
Integrated hydronic kit: 00, TF, TG, TH, TI, TJ														
°	AVX911	AVX909	AVX909	AVX907	AVX907	AVX907	AVX912	AVX914	AVX914	AVX915	AVX916	AVX916	AVX916	
A,L	AVX907	AVX912	AVX912	AVX912	AVX910	AVX913	AVX913	AVX924	AVX924	AVX925	AVX925	AVX927	AVX926	
E,U	AVX910	AVX910	AVX913	AVX913	AVX920	AVX917	AVX918	AVX925	AVX927	AVX927	AVX928	-	-	
N	AVX913	AVX917	AVX918	AVX919	AVX921	AVX921	AVX921	AVX926	-	-	-	-	-	
Integrated hydronic kit: DA, DB, DC, DD, DE, PA, PB, PC, PD, PE														
°	AVX911	-	-	-	-	-	-	-	-	-	-	-	-	
A,L	AVX907	-	-	-	-	-	-	-	-	-	-	-	-	
E,U	AVX910	-	-	-	-	-	-	-	-	-	-	-	-	
N	AVX913	-	-	-	-	-	-	-	-	-	-	-	-	
Integrated hydronic kit: DF, DG, DH, DI, DJ, PF, PG, PH, PI, PJ														
°	AVX911	AVX909	AVX909	AVX907	AVX907	AVX907	AVX912	-	-	-	-	-	-	
A,L	AVX907	AVX912	AVX912	AVX912	AVX910	AVX913	AVX913	-	-	-	-	-	-	
E,U	AVX910	AVX910	AVX913	AVX913	AVX920	AVX917	AVX918	-	-	-	-	-	-	
N	AVX913	AVX917	AVX918	AVX919	AVX921	AVX921	AVX921	-	-	-	-	-	-	

Power factor correction

Ver	1402	1602	1802	2002	2202	2352	2502	2652	2802
°	RIFNSM1402Q	RIFNSM1602Q	RIFNSM1802Q	RIFNSM2002Q	RIFNSM2202Q	RIFNSM2352Q	RIFNSM2502Q	RIFNSM2652Q	RIFNSM2802Q
A,L	RIFNSM1402Q	RIFNSM1602Q	RIFNSM1802Q	RIFNSM2002Q	RIFNSM2202Q	RIFNSM2352Q	RIFNSM2502Q	RIFNSM2652Q	RIFNSM2802C
E	RIFNSM1402Q	RIFNSM1602Q	RIFNSM1802Q	RIFNSM2002Q	RIFNSM2202Q	RIFNSM2352C	RIFNSM2502C	RIFNSM2652Q	RIFNSM2802C
N	RIFNSM1402Q	RIFNSM1602Q	RIFNSM1802C	RIFNSM2002Q	RIFNSM2202C	RIFNSM2352C	RIFNSM2502C	RIFNSM2652Q	RIFNSM2802C
U	RIFNSM1402Q	RIFNSM1602Q	RIFNSM1802Q	RIFNSM2002C	RIFNSM2202Q	RIFNSM2352C	RIFNSM2502C	RIFNSM2652Q	RIFNSM2802C

A grey background indicates the accessory must be assembled in the factory

Ver	3002	3202	3402	3602	3902	4202	4502	4802	5202
°	RIFNSM3002Q	RIFNSM3202Q	RIFNSM3402Q	RIFNSM3602Q	RIFNSM3902C	RIFNSM4202C	RIFNSM4502C	RIFNSM4802C	RIFNSM5202C
A,E,L,U	RIFNSM3002C	RIFNSM3202C	RIFNSM3402C	RIFNSM3602C	RIFNSM3902C	RIFNSM4202C	RIFNSM4502C	RIFNSM4802C	RIFNSM5202C
N	RIFNSM3002C	RIFNSM3202C	RIFNSM3402C	RIFNSM3602C	RIFNSM3902C	RIFNSM4202C	-	-	-

The accessory cannot be fitted on the configurations indicated with -

A grey background indicates the accessory must be assembled in the factory

Ver	5602	6002	6402	6503	6703	6903	7203	8403	9603
°,A,L	RIFNSM5602C	RIFNSM6002C	RIFNSM6402C	-	-	-	-	-	-

The accessory cannot be fitted on the configurations indicated with -

A grey background indicates the accessory must be assembled in the factory

Grids

Ver	1402	1602	1802	2002	2202	2352	2502	2652	2802
°	GP3V	GP3V	GP3V	GP4V	GP4V	GP4V	GP4V	GP4V	GP4V
A,L	GP4V	GP4V	GP4VN	GP4V	GP5V	GP5V	GP5V	GP6V	GP6V
E,U	GP4V	GP4V	GP5V	GP5V	GP5V	GP6V	GP6V	GP7V	GP7V
N	GP5V	GP5V	GP6V	GP6V	GP6V	GP7V	GP7V	GP8V	GP8V

A grey background indicates the accessory must be assembled in the factory

Ver	3002	3202	3402	3602	3902	4202	4502	4802	5202
°	GP5V	GP5V	GP5V	GP5V	GP6V	GP6V	GP7V	GP7V	GP8V
A,L	GP6V	GP6V	GP7V	GP7V	GP8V	GP8V	GP9V	GP9V	GP9V
E,U	GP7V	GP7V	GP8V	GP8V	GP9V	GP10V	GP10V	GP11V	GP11V
N	GP8V	GP8V	GP9V	GP10V	GP11V	GP11V	GP6V+GP7V	GP7V+GP7V	GP7V+GP8V

A grey background indicates the accessory must be assembled in the factory

Ver	5602	6002	6402	6503	6703	6903	7203	8403	9603
°	GP8V	GP8V	GP9V	GP9V	GP9V	GP10V	GP11V	GP11V	GP11V
A,L	GP11V	GP11V	GP11V	GP4V+GP8V	GP4V+GP8V	GP5V+GP9V	GP5V+GP9V	GP5V+GP10V	GP6V+GP11V
E,U	GP6V+GP6V	GP6V+GP7V	GP7V+GP7V	GP5V+GP9V	GP5V+GP10V	GP5V+GP10V	GP6V+GP11V	-	-
N	GP8V+GP8V	GP8V+GP8V	GP8V+GP8V	GP6V+GP11V	-	-	-	-	-

A grey background indicates the accessory must be assembled in the factory

Heater exchangers

Ver	1402	1602	1802	2002	2202	2352	2502	2652	2802
°A,L	KRS22	KRS22	KRS23	KRS23	KRS23	KRS23	KRS23	KRS23	KRS23
E,N,U	KRS23	KRS23	KRS23	KRS23	KRS23	KRS23	KRS23	KRS23	KRS23

A grey background indicates the accessory must be assembled in the factory

Ver	3002	3202	3402	3602	3902	4202	4502	4802	5202
°	KRS23	KRS23	KRS23	KRS23	KRS23	KRS23	KRS23	KRS24	KRS24
A,E,L	KRS23	KRS23	KRS24	KRS24	KRS24	KRS24	KRS24	KRS24	KRS24
N	KRS23	KRS23	KRS24	KRS24	KRS24	KRS24	KRS24	KRS23+KRS23	KRS23+KRS23
U	KRS23	KRS23	KRS24	KRS24	KRS24	KRS24	KRS23+KRS23	KRS24	KRS24

A grey background indicates the accessory must be assembled in the factory

Ver	5602	6002	6402	6503	6703	6903	7203	8403	9603
°	KRS24	KRS24	KRS24	KRS24	KRS24	KRS24	KRS24	KRS24	KRS24
A,L	KRS24	KRS24	KRS24	KRS23+KRS24	KRS23+KRS24	KRS23+KRS24	KRS23+KRS24	KRS23+KRS24	KRS23+KRS24
E,U	KRS23+KRS23	KRS23+KRS23	KRS23+KRS23	KRS23+KRS24	KRS23+KRS24	KRS23+KRS24	KRS23+KRS24	-	-
N	KRS23+KRS23	KRS23+KRS23	KRS23+KRS23	KRS23+KRS24	-	-	-	-	-

A grey background indicates the accessory must be assembled in the factory

10 SELECTION CRITERIA OF THE HEAT EXCHANGERS ACCORDING TO THE PLACE OF INSTALLATION OF THE UNIT

The guide provides advice for applications. Although recommendations are given, all the details about the real world application of our products cannot be fully covered in this document.

For these reasons, this section contains the basic warnings and precautions to be taken into account in general, it being understood that:

- The final choice of the type of exchanger according to the place of installation is left to the client (or to the professional appointed by him).
- In any case, it is recommended to wash the coils with adequate frequency (a maximum time interval of three months is recommended, shorter in conditions of particularly dirty and aggressive atmospheres) to preserve their condition and ensure the proper functioning of the unit.

Potentially corrosive outdoor environments include areas near coasts, industrial sites, densely populated urban areas, certain rural areas or a combination of these environments. Other factors, including the presence of effluent gas, sewage vents or open sewage systems and the exhaust of diesel engines can all be harmful for the microchannel coil.

The purpose of this application guide is to provide general information on the mechanisms of corrosion and corrosive environments.

SEA COAST ENVIRONMENTS

Coastal or marine environments are characterized by the abundance of sodium chloride (salt) which is carried by sea spray, mist, or fog. Most importantly, this salt water can be carried more than several miles by ocean breezes and tidal currents. It's not uncommon to experience salt-water contamination as far as 10km from the coast.

For this reason, it may be necessary to protect the exchangers from electrolytes of marine origin through the appropriate choice of materials and / or appropriate protective treatment.

INDUSTRIAL ENVIRONMENTS

Industrial applications are associated with several different conditions that can potentially produce a variety of atmospheric emissions.

Contaminants from sulphur and nitrogen oxides are most often linked to high-density urban environments. The combustion of coal oils and fuel oils releases sulphur oxides (SO₂, SO₃) and nitrogen oxides (NO_x) into the atmosphere. These gases accumulate in the atmosphere and return to the ground as acid rain or low pH dew.

Industrial emissions are not only potentially corrosive: many industrial dust particles can be loaded with harmful components such as metal oxides, chlorides, sulphates, sulfuric acid, carbon and carbon compounds.

In the presence of oxygen, water or high humidity environments, these particles can be extremely corrosive and in several forms, including general and localised corrosion, such as pitting and anthill.

MIX OF SEASIDE AND INDUSTRIAL ENVIRONMENTS

Sea mist loaded with salt, associated with the harmful emissions of an industrial environment, poses a serious risk.

The combined effects of the salt loaded mist and industrial emissions accelerate corrosion.

Within the manufacturing plants, corrosive gas may result from the processing of chemicals or by the typical industrial processes used in manufacturing.

Potential sources of risk to be considered are open sewage systems, exhaust vents, diesel engine exhaust, emissions from heavy traffic, landfills, aircraft and ocean-go-

ing ship engine exhaust, industrial production, chemical treatment facilities (cooling towers in the vicinity) and fossil fuel power plants.

URBAN ENVIRONMENTS

Densely populated areas generally have high levels of emissions of motor vehicles and increases in use for heating buildings.

Both conditions elevate sulfur oxide (SO_x) and nitrogen oxide (NO_x) concentrations.

Corrosive atmospheres may even occur in some closed areas, such as facilities with swimming pools and water treatment systems.

It is advisable to pay particular attention to the positioning of the units if it occurs in the immediate vicinity of these places, and to avoid that they are installed in the vicinity of outlets for the expulsion of air coming from them, or in any case exposed to such atmospheres.

Corrosion severity in this environment is a function of the pollution levels, which in turn depend on several factors including population density in the area.

Any equipment installed in locations immediately adjacent to diesel engine exhausts, incinerator flues, fuel-fired boiler flues, or areas exposed to fossil fuel emissions shall be considered subject to the same measures as an industrial application.

RURAL ENVIRONMENTS

Rural environments may contain high levels of pollution from ammonia and nitrogen products from animal excrements, fertilizers and high concentration of diesel engine exhaust. The approach to these environments must be entirely similar to that of industrial environments.

Local weather conditions have a major role in the concentration or dispersion of outdoor gaseous contaminants.

Thermal inversions can trap pollutants, thereby producing serious air pollution problems.

ADDITIONAL TIPS

Although each of the above corrosive environments can be detrimental to the life of the heat exchanger, several additional factors must be considered before choosing the final design.

The local climate surrounding the site of application may be influenced by the presence of:

- wind
- dust
- road salts
- swimming pools
- diesel engines discharge / traffic
- Localised mist
- cleaning agents for domestic use
- Sewage system outlets
- many other separate contaminants

Even within 3-5 km from these particular local climates a normal environment with moderate characteristics can be classified as an environment that requires preventive corrosion measures. When these factors are directly and immediately part of the environment, their influence is further aggravating.

Only in the absence of potentially risky situations such as those indicated above can an environment be considered moderate.

Application	Tip
Severe environments	Coils with suitable protection
Moderate environments	Standard coil °

11 BASIC PRINCIPLES ON MICROCHANNEL COIL CORROSION

The main material in Aermec heat exchangers is aluminium.

Aluminum is a very reactive metal, which is easily oxidized on its surface. As long as this hard layer of aluminum oxide remains intact, the aluminum at the base will remain resistant to corrosion (unlike other materials, such as steel, where the oxide layer peels off the surface and flakes off, allowing the constant attack of the underlying metal).

However, aggressive environments can damage the oxide layer, which may not regenerate as quickly as necessary to provide the product with sufficient protection. These harsh environments are typified by very high or very low pH levels.

Normally, aluminum's protective oxide layer is generally stable in the pH range of 4.5 to 8.5; the lack of exposure to excessively acidic or basic pH conditions is not in itself sufficient to exclude the need for appropriate protective treatments on the batteries.

The presence of salt (associated with marine environments) as well as the presence of other aggressive substances can in fact induce widespread or localized galvanic corrosion (pitting or anthill corrosion).

OTHER RISK FACTORS FOR CORROSION

The principal cause of corrosion is elevated humidity and/or temperatures in the presence of contaminant gases. These conditions alone, or in combination, accelerate the natural corrosion process in metals.

Humidity

Moisture in air can be considered the lifeblood of galvanic corrosion. A galvanic corrosion cell requires an electrolyte or current carrying media, to reach a dynamic state. The electrolyte can be water or any water-soluble substance with good conducting properties. Moisture in the air is one such electrolyte. Humid air contaminated with corrosive gasses further accelerates the corrosion rate as the air's current carrying potential increases.

Temperature

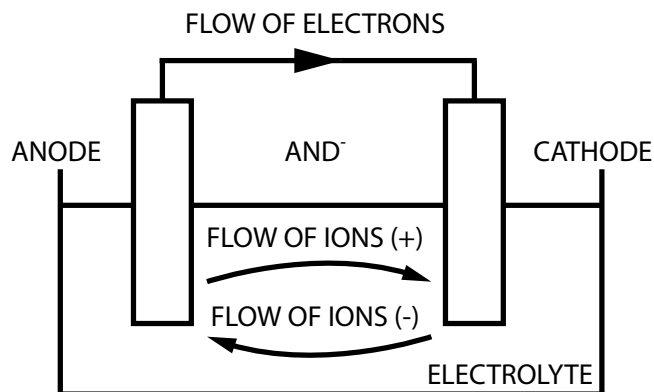
Chemical reactions generally depend on the temperature, for reactions that involve corrosion of aluminum by an increase in temperature, faster reaction frequencies usually arise.

Corrosive gases

Not all gases cause corrosion. Specifically, we are concerned with three types of gases:

- Acidic gases, such as hydrogen sulfide, sulfur oxides, chlorides, hydrogen fluoride (HF) and nitrogen oxides;
- Caustic gases, such as ammonia;
- Oxidizing gases, such as ozone

■ *Of the gases that can cause corrosion, the acidic gases are typically the most harmful.*



12 CLEANING MICRO-CHANNEL COIL

Keeping the surfaces of the microchannel coils clean is essential to ensure the correct operation of the unit and to avoid punctures on the coil with the consequent loss of refrigerant gas which would lead to the replacement of the coil itself.

⚠ WARNING Damage to the coil due to neglect or lack of or poor cleaning is not covered by the warranty.

Dirt, grease, oil, and other foreign material must be removed periodically from the surface of the battery according to the following recommendations.

Required elements:

- Personal protective equipment
- Hot water
- High-pressure washing

Procedure:

Use a high-pressure washer with a large cast and enough force to remove all foreign material, proceed with care to avoid damage and possible wear of the louvers.

Lastly, also rinse the carpentry and the fans thoroughly to be sure that all impurities have been removed.

■ *Aermecwe assume no liability for the completeness of the information contained in this document.*

13 PERFORMANCE SPECIFICATIONS

NSM

NSM - °

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Cooling performance 12 °C / 7 °C (1)															
Cooling capacity	kW	307,5	348,9	397,0	450,3	489,4	524,7	543,8	577,3	613,8	680,5	725,1	770,1	813,8	906,1
Input power	kW	104,8	121,0	139,0	152,8	166,4	180,6	193,9	210,5	226,5	232,7	247,5	272,1	298,3	316,2
Cooling total input current	A	182,0	207,0	229,0	257,0	281,0	306,0	329,0	356,0	381,0	392,0	414,0	447,0	484,0	520,0
EER	W/W	2,93	2,88	2,86	2,95	2,94	2,91	2,81	2,74	2,71	2,92	2,93	2,83	2,73	2,87
Water flow rate system side	l/h	52881	59999	68270	77459	84185	90223	93509	99261	105543	117009	124685	132413	139916	155801
Pressure drop system side	kPa	27	36	38	49	57	26	28	33	35	39	42	47	38	46

(1) Data 14511:2018; System side water heat exchanger 12 °C/7 °C; External air 35 °C

NSM °

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Cooling performance 12 °C / 7 °C (1)														
Cooling capacity	kW	958,5	1051,2	1099,1	1168,1	1195,0	1237,7	1327,6	1393,8	1439,8	1578,6 (2)	1669,7 (2)	1742,2 (2)	1859,9 (2)
Input power	kW	345,9	360,3	388,1	403,4	430,8	453,1	460,3	488,6	517,2	559,8	575,1	659,2	730,6
Cooling total input current	A	573,0	597,0	641,0	668,0	712,0	749,0	766,0	806,0	857,0	927,0	966,0	1103,0	1230,0
EER	W/W	2,77	2,92	2,83	2,90	2,77	2,73	2,88	2,85	2,78	2,82	2,90	2,64	2,55
Water flow rate system side	l/h	164794	180726	188953	200816	205451	212795	228246	239604	247511	271348	287011	299461	319697
Pressure drop system side	kPa	41	48	42	46	48	55	62	44	46	30	33	36	40

(1) Data 14511:2018; System side water heat exchanger 12 °C/7 °C; External air 35 °C

(2) Unit not Eurovent certified because it exceeds 1500 kW

NSM - L

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Cooling performance 12 °C / 7 °C (1)															
Cooling capacity	kW	302,4	344,0	392,7	428,1	490,9	513,8	537,4	583,4	602,8	664,4	709,1	771,0	826,1	908,8
Input power	kW	102,7	117,2	135,7	155,9	167,8	179,4	192,5	202,9	215,3	238,3	261,2	265,4	296,6	316,1
Cooling total input current	A	173,0	196,0	218,0	254,0	277,0	297,0	319,0	336,0	354,0	391,0	426,0	429,0	473,0	509,0
EER	W/W	2,94	2,94	2,89	2,75	2,93	2,86	2,79	2,88	2,80	2,79	2,72	2,91	2,79	2,88
Water flow rate system side	l/h	52016	59162	67531	73600	84402	88342	92402	100313	103652	114244	121903	132545	142018	156242
Pressure drop system side	kPa	27	36	38	18	24	25	28	33	31	36	23	23	25	32

(1) Data 14511:2018; System side water heat exchanger 12 °C/7 °C; External air 35 °C

NSM - L

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Cooling performance 12 °C / 7 °C (1)														
Cooling capacity	kW	949,7	1032,5	1076,9	1122,7	1183,7	1254,5	1295,6	1395,1	1436,6	1605,1 (2)	1649,4 (2)	1758,0 (2)	1946,7 (2)
Input power	kW	348,7	365,9	395,0	428,8	442,3	453,2	476,4	491,5	523,6	556,9	586,7	660,2	713,5
Cooling total input current	A	567,0	593,0	638,0	693,0	716,0	736,0	776,0	793,0	849,0	914,0	960,0	1067,0	1163,0
EER	W/W	2,72	2,82	2,73	2,62	2,68	2,77	2,72	2,84	2,74	2,88	2,81	2,66	2,73
Water flow rate system side	l/h	163268	177512	185148	193004	203496	215669	222723	239820	246956	275911	283536	302181	334622
Pressure drop system side	kPa	34	44	46	33	36	42	45	33	34	45	47	34	45

(1) Data 14511:2018; System side water heat exchanger 12 °C/7 °C; External air 35 °C

(2) Unit not Eurovent certified because it exceeds 1500 kW

NSM - A

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Cooling performance 12 °C / 7 °C (1)															
Cooling capacity	kW	315,6	360,2	415,2	461,4	509,5	544,9	576,9	620,9	658,9	699,4	741,7	800,6	884,3	955,2
Input power	kW	99,0	113,7	133,7	148,3	161,8	173,6	183,3	197,5	208,3	223,6	237,4	253,4	281,2	303,8
Cooling total input current	A	175,0	198,0	223,0	250,0	278,0	298,0	314,0	340,0	355,0	378,0	399,0	421,0	459,0	502,0
EER	W/W	3,19	3,17	3,11	3,11	3,15	3,14	3,15	3,14	3,16	3,13	3,12	3,16	3,15	3,14
Water flow rate system side	l/h	54280	61954	71417	79331	87600	93687	99196	106766	113293	120259	127516	137633	152015	164211
Pressure drop system side	kPa	30	39	43	21	26	28	32	37	37	40	25	25	29	36

(1) Data 14511:2018; System side water heat exchanger 12 °C/7 °C; External air 35 °C

NSM - A

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Cooling performance 12 °C / 7 °C (1)														
Cooling capacity	kW	1021,7	1084,5	1160,1	1213,2	1275,8	1352,3	1402,7	1462,2	1531,9 (2)	1682,9 (2)	1753,4 (2)	1908,6 (2)	2106,4 (2)
Input power	kW	328,5	347,0	371,7	389,2	410,5	432,6	451,5	466,3	493,4	534,6	560,2	614,3	673,3
Cooling total input current	A	547,0	577,0	614,0	647,0	685,0	725,0	758,0	772,0	821,0	897,0	936,0	1017,0	1132,0
EER	W/W	3,11	3,13	3,12	3,12	3,11	3,13	3,11	3,14	3,10	3,15	3,13	3,11	3,13
Water flow rate system side	l/h	175657	186457	199460	208561	219327	232478	241144	251345	263330	289291	301409	328062	362058
Pressure drop system side	kPa	39	49	53	38	42	49	52	36	39	49	53	41	52

(1) Data 14511:2018; System side water heat exchanger 12 °C/7 °C; External air 35 °C

(2) Unit not Eurovent certified because it exceeds 1500 kW

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Cooling performance 12 °C / 7 °C (1)															
Cooling capacity	kW	319,6	368,5	417,6	472,4	514,2	543,2	579,6	615,2	652,1	695,4	740,6	796,5	881,6	951,8
Input power	kW	101,7	117,4	132,3	150,0	165,4	173,7	186,0	194,8	210,1	224,0	238,6	255,4	283,8	305,7
Cooling total input current	A	171,0	196,0	214,0	245,0	272,0	288,0	309,0	324,0	347,0	367,0	389,0	411,0	450,0	490,0
EER	W/W	3,14	3,14	3,16	3,15	3,11	3,13	3,12	3,16	3,10	3,11	3,10	3,12	3,11	3,11
Water flow rate system side	l/h	54958	63367	71800	81228	88406	93396	99657	105762	112115	119555	127316	136926	151562	163628
Pressure drop system side	kPa	15	14	18	21	24	26	30	24	26	29	26	25	29	36

(1) Data 14511:2018; System side water heat exchanger 12 °C/7 °C; External air 35 °C

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Cooling performance 12 °C / 7 °C (1)														
Cooling capacity	kW	1018,9	1082,1	1159,1	1206,7	1265,2	1322,0	1389,6	1464,9	1528,1 (2)	1670,1 (2)	1752,6 (2)	-	-
Input power	kW	325,9	347,4	370,9	387,8	405,6	422,2	443,7	469,4	489,0	534,5	563,0	-	-
Cooling total input current	A	529,0	560,0	598,0	628,0	656,0	686,0	724,0	764,0	792,0	861,0	898,0	-	-
EER	W/W	3,13	3,11	3,13	3,11	3,12	3,13	3,13	3,12	3,13	3,12	3,11	-	-
Water flow rate system side	l/h	175173	186051	199271	207449	217481	227238	238869	251810	262683	287098	301260	-	-
Pressure drop system side	kPa	40	49	36	38	24	24	29	35	40	49	45	-	-

(1) Data 14511:2018; System side water heat exchanger 12 °C/7 °C; External air 35 °C

(2) Unit not Eurovent certified because it exceeds 1500 kW

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Cooling performance 12 °C / 7 °C (1)															
Cooling capacity	kW	331,0	378,1	432,1	481,7	527,6	564,7	590,5	635,0	675,3	708,2	750,8	811,2	902,5	975,6
Input power	kW	98,6	113,5	128,9	145,7	161,0	169,2	178,4	190,3	204,2	214,1	228,0	245,2	273,3	294,9
Cooling total input current	A	173,0	197,0	218,0	248,0	275,0	292,0	309,0	330,0	352,0	366,0	387,0	410,0	448,0	490,0
EER	W/W	3,36	3,33	3,35	3,31	3,28	3,34	3,31	3,34	3,31	3,31	3,29	3,31	3,30	3,31
Water flow rate system side	l/h	56933	65026	74302	82821	90716	97089	101524	109164	116096	121764	129073	139455	155146	167724
Pressure drop system side	kPa	17	15	19	21	25	28	31	25	28	30	26	26	30	37

(1) Data 14511:2018; System side water heat exchanger 12 °C/7 °C; External air 35 °C

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Cooling performance 12 °C / 7 °C (1)														
Cooling capacity	kW	1043,4	1104,7	1184,6	1234,0	1301,2	1360,8	1419,5	1505,6 (2)	1579,3 (2)	1693,4 (2)	1772,6 (2)	-	-
Input power	kW	315,2	336,8	357,4	380,5	400,8	418,5	427,8	453,3	472,9	522,1	540,7	-	-
Cooling total input current	A	530,0	562,0	597,0	634,0	671,0	706,0	725,0	762,0	795,0	870,0	896,0	-	-
EER	W/W	3,31	3,28	3,31	3,24	3,25	3,25	3,32	3,32	3,34	3,24	3,28	-	-
Water flow rate system side	l/h	179384	189926	203652	212142	223669	233910	244004	258808	271482	291091	304708	-	-
Pressure drop system side	kPa	42	51	38	40	26	26	31	37	42	51	46	-	-

(1) Data 14511:2018; System side water heat exchanger 12 °C/7 °C; External air 35 °C

(2) Unit not Eurovent certified because it exceeds 1500 kW

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Cooling performance 12 °C / 7 °C (1)															
Cooling capacity	kW	329,8	375,3	431,9	474,4	517,0	550,9	578,6	620,4	659,2	701,2	743,2	803,1	879,6	955,4
Input power	kW	98,1	113,1	127,6	144,8	160,4	168,7	178,2	190,1	204,5	217,3	231,1	247,6	270,2	292,6
Cooling total input current	A	165,0	190,0	207,0	237,0	265,0	281,0	297,0	317,0	339,0	358,0	378,0	399,0	429,0	470,0
EER	W/W	3,36	3,32	3,38	3,28	3,22	3,27	3,25	3,26	3,22	3,23	3,22	3,24	3,26	3,27
Water flow rate system side	l/h	56717	64546	74260	81573	88881	94723	99476	106664	113329	120551	127777	138054	151226	164260
Pressure drop system side	kPa	16	15	19	21	24	28	30	25	27	29	26	25	30	37

(1) Data 14511:2018; System side water heat exchanger 12 °C/7 °C; External air 35 °C

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Cooling performance 12 °C / 7 °C (1)														
Cooling capacity	kW	1014,4	1086,1	1169,7	1219,0	1267,1	1317,0	1367,2	1452,6	-	-	-	-	-
Input power	kW	315,6	332,8	352,6	374,6	396,5	410,4	428,2	450,1	-	-	-	-	-
Cooling total input current	A	513,0	540,0	569,0	605,0	643,0	668,0	700,0	731,0	-	-	-	-	-
EER	W/W	3,21	3,26	3,32	3,25	3,20	3,21	3,19	3,23	-	-	-	-	-
Water flow rate system side	l/h	174394	186718	201086	209575	217799	226384	235022	249705	-	-	-	-	-
Pressure drop system side	kPa	40	35	44	44	26	26	30	37	-	-	-	-	-

(1) Data 14511:2018; System side water heat exchanger 12 °C/7 °C; External air 35 °C

NSM WITH DESUPERHEATER

NSM D°

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Cooling performances with desuperheater (1)															
Recovered heating power	kW	76,5	96,6	124,3	118,6	137,9	161,6	177,3	191,0	212,6	198,3	216,0	247,7	281,0	285,3
Desuperheater water flow rate	l/h	13302	16787	21606	20619	23972	28082	30818	33196	36942	34462	37543	43049	48842	49582
Pressure drop desuperheater	kPa	10	13	18	15	15	18	18	20	20	17	17	18	18	18
Desuperheater															
Type	type	Brazed plate													
Number	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Minimum water flow rate	l/h	6622	8357	10756	10264	11934	13980	15342	16526	18390	17156	18689	21430	24314	24683
Maximum water flow rate	l/h	22073	27857	35852	34213	39778	46598	51138	55085	61300	57187	62297	71433	81047	82275
Connections (in/out)	Type	Grooved joints													
Sizes (in/out)	Ø	2"													
Water content	l	4	4	6	6	6	7	8	8	9	9	9	12	15	16

(1) User side water heat exchanger 12 °C / 7 °C; Water desuperheater 40 °C/45 °C; Outdoor air 35 °C

NSM D°

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Cooling performances with desuperheater (1)														
Recovered heating power	kW	324,7	324,7	363,5	358,8	389,7	420,2	410,2	451,7	486,6	528,2	527,6	615,9	687,1
Desuperheater water flow rate	l/h	56438	56427	63182	62352	67725	73035	71290	78501	84576	91804	91689	107034	119425
Pressure drop desuperheater	kPa	18	18	18	21	21	26	23	18	18	19	18	24	29
Desuperheater														
Type	type	Brazed plate												
Number	no.	2	2	2	2	2	2	2	3	3	3	3	3	3
Minimum water flow rate	l/h	28096	28090	31453	31040	33714	36358	35489	39079	42103	45701	45644	53283	59451
Maximum water flow rate	l/h	93652	93632	104842	103465	112380	121192	118297	130262	140342	152337	152145	177608	198168
Connections (in/out)	Type	Grooved joints												
Sizes (in/out)	Ø	2"												
Water content	l	18	21	23	23	23	23	23	16	18	21	23	23	23

(1) User side water heat exchanger 12 °C / 7 °C; Water desuperheater 40 °C/45 °C; Outdoor air 35 °C

NSM DL

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Cooling performances with desuperheater (1)															
Recovered heating power	kW	74,5	93,4	119,7	150,3	148,5	165,3	187,1	178,6	205,7	216,5	242,2	245,7	280,2	294,4
Desuperheater water flow rate	l/h	12957	16237	20799	26127	25803	28727	32513	31039	35749	37621	42102	42697	48695	51169
Pressure drop desuperheater	kPa	10	13	17	24	17	19	20	17	18	20	20	18	18	19
Desuperheater															
Type	type	Brazed plate													
Number	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Minimum water flow rate	l/h	6450	8083	10354	13006	12845	14301	16185	15452	17796	18728	20959	21255	24241	25473
Maximum water flow rate	l/h	21500	26943	34512	43353	42817	47668	53950	51505	59320	62427	69862	70850	80802	84908
Connections (in/out)	Type	Grooved joints													
Sizes (in/out)	Ø	2"													
Water content	l	4	4	6	6	6	7	8	8	9	9	9	12	15	16

(1) User side water heat exchanger 12 °C / 7 °C; Water desuperheater 40 °C/45 °C; Outdoor air 35 °C

NSM DL

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Cooling performances with desuperheater (1)														
Recovered heating power	kW	329,4	341,7	373,4	388,6	393,0	394,0	420,9	460,3	495,3	517,6	549,2	626,3	632,2
Desuperheater water flow rate	l/h	57247	59395	64900	67546	68298	68470	73160	80007	86088	89953	95458	108842	109878
Pressure drop desuperheater	kPa	19	19	19	23	21	24	24	19	19	19	19	23	24
Desuperheater														
Type	type	Brazed plate												
Number	no.	2	2	2	2	2	2	2	3	3	3	3	3	3
Minimum water flow rate	l/h	28499	29567	32308	33625	33999	34085	36420	39828	42856	44779	47520	54183	54698
Maximum water flow rate	l/h	94995	98557	107693	112083	113330	113617	121398	132760	142852	149263	158398	180608	182327
Connections (in/out)	Type	Grooved joints												
Sizes (in/out)	Ø	2"												
Water content	l	18	21	23	23	23	23	23	16	18	21	23	23	23

(1) User side water heat exchanger 12 °C / 7 °C; Water desuperheater 40 °C/45 °C; Outdoor air 35 °C

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Cooling performances with desuperheater (1)															
Recovered heating power	kW	63,8	78,8	98,9	124,6	122,5	134,6	150,8	147,0	167,0	181,5	201,3	211,4	245,4	256,1
Desuperheater water flow rate	l/h	11092	13688	17188	21649	21288	23397	26215	25546	29031	31543	34992	36737	42644	44505
Pressure drop desuperheater	kPa	7	9	12	17	12	13	13	12	13	14	15	14	14	15
Desuperheater															
Type	type	Brazed plate													
Number	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Minimum water flow rate	l/h	5522	6814	8557	10777	10598	11647	13051	12717	14452	15703	17420	18288	21229	22155
Maximum water flow rate	l/h	18407	22713	28522	35923	35325	38823	43502	42390	48172	52342	58065	60960	70762	73850
Connections (in/out)	Type	Grooved joints													
Sizes (in/out)	Ø	2"													
Water content	l	4	4	6	6	6	7	8	8	9	9	9	12	15	16

(1) User side water heat exchanger 12 °C / 7 °C; Water desuperheater 40 °C/45 °C; Outdoor air 35 °C

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Cooling performances with desuperheater (1)														
Recovered heating power	kW	288,0	296,4	327,4	340,6	338,1	343,3	365,0	401,0	432,9	445,6	476,4	547,1	547,4
Desuperheater water flow rate	l/h	50052	51505	56900	59204	58759	59665	63428	69698	75232	77442	82805	95077	95137
Pressure drop desuperheater	kPa	15	15	15	19	16	18	18	15	15	15	15	18	18
Desuperheater														
Type	type	Brazed plate												
Number	no.	2	2	2	2	2	2	2	3	3	3	3	3	3
Minimum water flow rate	l/h	24917	25640	28326	29472	29251	29702	31575	34696	37452	38551	41221	47330	47360
Maximum water flow rate	l/h	83055	85467	94418	98240	97502	99005	105250	115653	124838	128503	137403	157767	157865
Connections (in/out)	Type	Grooved joints												
Sizes (in/out)	Ø	2"												
Water content	l	18	21	23	23	23	23	23	16	18	21	23	23	23

(1) User side water heat exchanger 12 °C / 7 °C; Water desuperheater 40 °C/45 °C; Outdoor air 35 °C

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Cooling performances with desuperheater (1)															
Recovered heating power	kW	79,0	100,5	105,2	133,6	157,4	149,4	163,7	163,5	181,0	199,1	221,4	233,5	270,4	284,4
Desuperheater water flow rate	l/h	13724	17469	18276	23212	27352	25972	28451	28419	31465	34603	38478	40591	47002	49429
Pressure drop desuperheater	kPa	11	14	13	19	19	15	15	15	15	17	17	17	17	18
Desuperheater															
Type	type	Brazed plate													
Number	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Minimum water flow rate	l/h	6832	8696	9098	11556	13616	12929	14163	14147	15664	17226	19155	20207	23398	24606
Maximum water flow rate	l/h	22773	28987	30327	38518	45387	43097	47210	47157	52212	57418	63848	67355	77993	82020
Connections (in/out)	Type	Grooved joints													
Sizes (in/out)	Ø	2"													
Water content	l	4	4	6	6	6	7	8	8	9	9	9	12	15	16

(1) User side water heat exchanger 12 °C / 7 °C; Water desuperheater 40 °C/45 °C; Outdoor air 35 °C

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Cooling performances with desuperheater (1)														
Recovered heating power	kW	293,7	332,0	345,7	361,5	387,4	388,5	389,7	433,2	442,4	515,3	528,7	-	-
Desuperheater water flow rate	l/h	51039	57694	60079	62826	67328	67528	67725	75285	76896	89557	91892	-	-
Pressure drop desuperheater	kPa	15	18	16	18	20	21	21	18	16	18	18	-	-
Desuperheater														
Type	type	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	-	-
Number	no.	2	2	2	2	2	2	2	3	3	3	3	-	-
Minimum water flow rate	l/h	25408	28721	29908	31275	33516	33616	33714	37478	38280	44582	45745	-	-
Maximum water flow rate	l/h	84692	95735	99693	104250	111720	112053	112380	124925	127598	148607	152482	-	-
Connections (in/out)	Type	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	-	-
Sizes (in/out)	Ø	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	-	-
Water content	l	18	21	23	23	23	23	23	16	18	21	23	-	-

(1) User side water heat exchanger 12 °C / 7 °C; Water desuperheater 40 °C/45 °C; Outdoor air 35 °C

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Cooling performances with desuperheater (1)															
Recovered heating power	kW	67,4	84,2	89,2	110,8	128,8	124,6	135,5	137,1	150,8	161,4	175,1	190,3	221,5	234,2
Desuperheater water flow rate	l/h	11706	14638	15502	19256	22384	21657	23557	23829	26203	28058	30424	33071	38496	40698
Pressure drop desuperheater	kPa	8	10	10	13	13	11	11	10	10	11	11	12	12	12
Desuperheater															
Type	type	Braze plate													
Number	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Minimum water flow rate	l/h	5827	7287	7717	9586	11143	10782	11727	11863	13044	13968	15145	16463	19164	20260
Maximum water flow rate	l/h	19423	24288	25723	31953	37143	35938	39090	39542	43480	46558	50483	54877	63878	67533
Connections (in/out)	Type	Grooved joints													
Sizes (in/out)	Ø	2"													
Water content	l	4	4	6	6	6	7	8	8	9	9	9	12	15	16

(1) User side water heat exchanger 12 °C / 7 °C; Water desuperheater 40 °C/45 °C; Outdoor air 35 °C

NSM DU

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Cooling performances with desuperheater (1)														
Recovered heating power	kW	242,6	273,0	283,5	311,5	320,2	322,1	324,7	356,2	364,5	422,4	432,8	-	-
Desuperheater water flow rate	l/h	42157	47453	49278	54139	55658	55981	56434	61910	63348	73411	75213	-	-
Pressure drop desuperheater	kPa	11	13	11	14	14	15	15	12	11	13	13	-	-
Desuperheater														
Type	type	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	-	-
Number	no.	2	2	2	2	2	2	2	3	3	3	3	-	-
Minimum water flow rate	l/h	20986	23623	24531	26951	27707	27868	28093	30820	31535	36545	37442	-	-
Maximum water flow rate	l/h	69953	78742	81770	89837	92357	92893	93643	102732	105117	121817	124805	-	-
Connections (in/out)	Type	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	-	-
Sizes (in/out)	Ø	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	-	-
Water content	l	18	21	23	23	23	23	23	16	18	21	23	-	-

(1) User side water heat exchanger 12 °C / 7 °C; Water desuperheater 40 °C/45 °C; Outdoor air 35 °C

NSM DN

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Cooling performances with desuperheater (1)															
Recovered heating power	kW	68,8	85,7	93,3	116,1	135,1	133,0	144,9	148,3	163,4	177,0	193,8	210,9	225,2	242,3
Desuperheater water flow rate	l/h	11955	14900	16208	20171	23484	23118	25182	25775	28395	30758	33691	36660	39135	42104
Pressure drop desuperheater	kPa	8	11	11	15	15	12	12	12	12	13	14	14	12	13
Desuperheater															
Type	type	Braze plate													
Number	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Minimum water flow rate	l/h	5952	7418	8069	10041	11691	11508	12536	12831	14136	15312	16772	18250	19482	20960
Maximum water flow rate	l/h	19838	24725	26895	33470	38968	38360	41787	42770	47118	51038	55905	60832	64940	69865
Connections (in/out)	Type	Grooved joints													
Sizes (in/out)	Ø	2"													
Water content	l	4	4	6	6	6	7	8	8	9	9	9	12	15	16

(1) User side water heat exchanger 12 °C / 7 °C; Water desuperheater 40 °C/45 °C; Outdoor air 35 °C

NSM DN

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Cooling performances with desuperheater (1)														
Recovered heating power	kW	271,5	269,1	281,1	296,3	311,5	331,8	352,1	370,9	-	-	-	-	-
Desuperheater water flow rate	l/h	47179	46770	48854	51500	54142	57673	61203	64455	-	-	-	-	-
Pressure drop desuperheater	kPa	13	12	11	14	14	17	17	13	-	-	-	-	-
Desuperheater														
Type	type	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	-	-	-	-	-
Number	no.	2	2	2	2	2	2	2	3	-	-	-	-	-
Minimum water flow rate	l/h	23486	23283	24320	25637	26953	28710	30467	32087	-	-	-	-	-
Maximum water flow rate	l/h	78287	77608	81067	85457	89842	95700	101557	106955	-	-	-	-	-
Connections (in/out)	Type	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	-	-	-	-	-
Sizes (in/out)	Ø	2"	2"	2"	2"	2"	2"	2"	2"	-	-	-	-	-
Water content	l	18	21	23	23	23	23	23	16	-	-	-	-	-

(1) User side water heat exchanger 12 °C / 7 °C; Water desuperheater 40 °C/45 °C; Outdoor air 35 °C

NSM WITH TOTAL HEAT RECOVERY

NSM T°

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Cooling performances with total recovery (1)															
Recovered heating power	kW	-	-	-	553,1	613,0	646,4	679,9	726,6	773,3	844,5	915,6	986,9	1058,1	1132,5
Total recovery water flow rate	l/h	-	-	-	96134	106537	112350	118163	126282	134400	146767	159133	171515	183897	196834
Total pressure drop total recovery	kPa	-	-	-	56	49	60	49	64	64	54	56	51	42	47
Total recovery															
Type	type	-	-	-	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate
Number	no.	-	-	-	1	1	1	1	1	1	2	2	2	2	2
Minimum water flow rate	l/h	32512	37634	42865	48067	53269	56175	59082	63141	67200	73384	79567	85758	91949	98417
Maximum water flow rate	l/h	108373	125445	142883	160223	177562	187250	196938	210470	224000	244612	265222	285858	306495	328057
Connections (in/out)	Type	-	-	-	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints
Sizes (in/out)	Ø	-	-	-	4"	4"	4"	4"	4"	4"	5"	5"	5"	5"	5"
Water content	l	-	-	-	58	58	58	70	70	70	80	91	103	115	115

(1) User side water heat exchanger 12 °C/7 °C; Water total recovery 40 °C/45 °C; Outdoor air 35 °C

NSM T°

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Cooling performances with total recovery (1)														
Recovered heating power	kW	1207,0	1289,5	1372,0	1434,2	1496,4	1563,0	1629,6	1736,0	1810,5	1975,5	2058,0	2244,6	2444,3
Total recovery water flow rate	l/h	209772	224112	238452	249265	260079	271648	283217	301720	314657	343338	357678	390118	424826
Total pressure drop total recovery	kPa	47	50	50	60	60	71	71	50	47	61	50	60	71
Total recovery														
Type	type	Brazed plate												
Number	no.	2	2	2	2	2	2	2	3	3	3	3	3	3
Minimum water flow rate	l/h	104886	112056	119226	124633	130040	135824	141609	150860	157329	171669	178839	195059	212413
Maximum water flow rate	l/h	349620	373520	397420	415442	433465	452747	472028	502867	524428	572230	596130	650197	708043
Connections (in/out)	Type	Grooved joints												
Sizes (in/out)	Ø	5"	5"	5"	5"	5"	5"	5"	5" + 4"	5" + 4"	5" + 4"	5" + 4"	5" + 4"	5" + 4"
Water content	l	115	128	140	140	140	140	140	173	173	198	211	211	211

(1) User side water heat exchanger 12 °C/7 °C; Water total recovery 40 °C/45 °C; Outdoor air 35 °C

NSM TL

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Cooling performances with total recovery (1)															
Recovered heating power	kW	387,6	448,1	510,3	572,1	633,8	668,4	702,9	751,6	800,3	862,2	924,0	1009,8	1095,5	1172,1
Total recovery water flow rate	l/h	67356	77878	88689	99423	110156	116161	122166	130632	139098	149846	160595	175500	190405	203707
Total pressure drop total recovery	kPa	40	53	46	60	52	64	53	68	68	56	57	54	45	50
Total recovery															
Type	type	Brazed plate													
Number	no.	1	1	1	1	1	1	1	1	1	2	2	2	2	2
Minimum water flow rate	l/h	33678	38939	44345	49712	55078	58081	61083	65316	69549	74923	80298	87750	95203	101854
Maximum water flow rate	l/h	112260	129797	147815	165705	183593	193602	203610	217720	231830	249743	267658	292500	317342	339512
Connections (in/out)	Type	Grooved joints													
Sizes (in/out)	Ø	3"	3"	4"	4"	4"	4"	4"	4"	4"	5"	5"	5"	5"	5"
Water content	l	35	35	45	58	58	58	70	70	70	80	91	103	115	115

(1) User side water heat exchanger 12 °C/7 °C; Water total recovery 40 °C/45 °C; Outdoor air 35 °C

NSM TL

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Cooling performances with total recovery (1)														
Recovered heating power	kW	1248,6	1333,1	1417,6	1482,3	1546,9	1615,6	1684,2	1796,4	1872,9	2042,0	2126,5	2320,4	2526,4
Total recovery water flow rate	l/h	217010	231698	246385	257618	268851	280785	292720	312212	325515	354890	369578	403276	439080
Total pressure drop total recovery	kPa	50	53	54	64	64	76	76	53	50	65	54	64	76
Total recovery														
Type	type	Brazed plate												
Number	no.	2	2	2	2	2	2	2	3	3	3	3	3	3
Maximum water flow rate	l/h	361683	386163	410642	429363	448085	467975	487867	520353	542525	591483	615963	672127	731800
Minimum water flow rate	l/h	108505	115849	123193	128809	134426	140393	146360	156106	162758	177445	184789	201638	219540
Connections (in/out)	Type	Grooved joints												
Sizes (in/out)	Ø	5"	5"	5"	5"	5"	5"	5"	5"+4"	5"+4"	5"+4"	5"+4"	5"+4"	5"+4"
Water content	l	115	128	140	140	140	140	140	173	173	198	211	211	211

(1) User side water heat exchanger 12 °C/7 °C; Water total recovery 40 °C/45 °C; Outdoor air 35 °C

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Cooling performances with total recovery (1)															
Recovered heating power	kW	387,6	448,1	510,3	572,1	633,8	668,4	702,9	751,6	800,3	862,2	924,0	1009,8	1095,5	1172,1
Total recovery water flow rate	l/h	67356	77878	88689	99423	110156	116161	122166	130632	139098	149846	160595	175500	190405	203707
Total pressure drop total recovery	kPa	40	53	46	60	52	64	53	68	68	56	57	54	45	50
Total recovery															
Type	type	Brazed plate													
Number	no.	1	1	1	1	1	1	1	1	1	2	2	2	2	2
Minimum water flow rate	l/h	33678	38939	44345	49712	55078	58081	61083	65316	69549	74923	80298	87750	95203	101854
Maximum water flow rate	l/h	112260	129797	147815	165705	183593	193602	203610	217720	231830	249743	267658	292500	317342	339512
Connections (in/out)	Type	Grooved joints													
Sizes (in/out)	Ø	3"	3"	4"	4"	4"	4"	4"	4"	4"	5"	5"	5"	5"	5"
Water content	l	35	35	45	58	58	58	70	70	70	80	91	103	115	115

(1) User side water heat exchanger 12 °C/7 °C; Water total recovery 40 °C/45 °C; Outdoor air 35 °C

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Cooling performances with total recovery (1)														
Recovered heating power	kW	1248,6	1333,1	1417,6	1482,3	1546,9	1615,6	1684,2	1796,4	1872,9	2042,0	2126,5	2320,4	2526,4
Total recovery water flow rate	l/h	217010	231698	246385	257618	268851	280785	292720	312212	325515	354890	369578	403276	439080
Total pressure drop total recovery	kPa	50	53	54	64	64	76	76	53	50	65	54	64	76
Total recovery														
Type	type	Brazed plate												
Number	no.	2	2	2	2	2	2	2	3	3	3	3	3	3
Minimum water flow rate	l/h	108505	115849	123193	128809	134426	140393	146360	156106	162758	177445	184789	201638	219540
Maximum water flow rate	l/h	361683	386163	410642	429363	448085	467975	487867	520353	542525	591483	615963	672127	731800
Connections (in/out)	Type	Grooved joints												
Sizes (in/out)	Ø	5"	5"	5"	5"	5"	5"	5"	5"+4"	5"+4"	5"+4"	5"+4"	5"+4"	5"+4"
Water content	l	115	128	140	140	140	140	140	173	173	198	211	211	211

(1) User side water heat exchanger 12 °C/7 °C; Water total recovery 40 °C/45 °C; Outdoor air 35 °C

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Cooling performances with total recovery (1)															
Recovered heating power	kW	391,6	452,7	515,3	577,7	640,0	674,6	709,1	758,9	808,7	868,5	928,2	1017,2	1106,2	1183,6
Total recovery water flow rate	l/h	68052	78679	89559	100397	111235	117240	123244	131902	140560	150943	161326	176788	192250	205709
Total pressure drop total recovery	kPa	41	54	47	61	53	65	54	70	70	57	57	54	46	51
Total recovery															
Type	type	Brazed plate													
Number	no.	1	1	1	1	1	1	1	1	1	2	2	2	2	2
Minimum water flow rate	l/h	34026	39340	44780	50199	55618	58620	61622	65951	70280	75472	80663	88394	96125	102855
Maximum water flow rate	l/h	113420	131132	149265	167328	185392	195400	205407	219837	234267	251572	268877	294647	320417	342848
Connections (in/out)	Type	Grooved joints													
Sizes (in/out)	Ø	3"	3"	4"	4"	4"	4"	4"	4"	4"	5"	5"	5"	5"	5"
Water content	l	35	35	45	58	58	58	70	70	70	80	91	103	115	115

(1) User side water heat exchanger 12 °C/7 °C; Water total recovery 40 °C/45 °C; Outdoor air 35 °C

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Cooling performances with total recovery (1)														
Recovered heating power	kW	1261,0	1345,5	1430,1	1495,8	1561,5	1631,2	1700,9	1814,1	1891,6	2060,6	2145,1	-	-
Total recovery water flow rate	l/h	219167	233855	248543	259967	271391	283500	295608	315292	328751	358126	372814	-	-
Total pressure drop total recovery	kPa	51	54	54	65	65	77	77	54	51	66	54	-	-
Total recovery														
Type	type	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	-	-
Number	no.	2	2	2	2	2	2	2	3	3	3	3	-	-
Minimum water flow rate	l/h	109584	116928	124272	129984	135696	141750	147804	157646	164376	179063	186407	-	-
Maximum water flow rate	l/h	365278	389758	414238	433278	452318	472500	492680	525487	547918	596877	621357	-	-
Connections (in/out)	Type	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	-	-
Sizes (in/out)	Ø	5"	5"	5"	5"	4"+4"	4"+4"	4"+4"	5"+4"	5"+4"	5"+4"	5"+4"	-	-
Water content	l	115	128	140	140	140	140	140	173	173	198	211	-	-

(1) User side water heat exchanger 12 °C/7 °C; Water total recovery 40 °C/45 °C; Outdoor air 35 °C

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Cooling performances with total recovery (1)															
Recovered heating power	kW	391,6	452,7	515,3	577,7	640,0	674,6	709,1	758,9	808,7	868,5	928,2	1017,2	1106,2	1183,6
Total recovery water flow rate	l/h	68052	78679	89559	100397	111235	117240	123244	131902	140560	150943	161326	176788	192250	205709
Total pressure drop total recovery	kPa	41	54	47	61	53	65	54	70	70	57	57	54	46	51
Total recovery															
Type	type	Braze plate													
Number	no.	1	1	1	1	1	1	1	1	1	2	2	2	2	2
Minimum water flow rate	l/h	34026	39340	44780	50199	55618	58620	61622	65951	70280	75472	80663	88394	96125	102855
Maximum water flow rate	l/h	113420	131132	149265	167328	185392	195400	205407	219837	234267	251572	268877	294647	320417	342848
Connections (in/out)	Type	Grooved joints													
Sizes (in/out)	Ø	3"	3"	4"	4"	4"	4"	4"	4"	4"	5"	5"	5"	5"	5"
Water content	l	35	35	45	58	58	58	70	70	70	80	91	103	115	115

(1) User side water heat exchanger 12 °C/7 °C; Water total recovery 40 °C/45 °C; Outdoor air 35 °C

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Cooling performances with total recovery (1)														
Recovered heating power	kW	1261,0	1345,5	1430,1	1495,8	1561,5	1631,2	1700,9	1814,1	1891,6	2060,6	2145,1	-	-
Total recovery water flow rate	l/h	219167	233855	248543	259967	271391	283500	295608	315292	328751	358126	372814	-	-
Total pressure drop total recovery	kPa	51	54	54	65	65	77	77	54	51	66	54	-	-
Total recovery														
Type	type	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	-	-
Number	no.	2	2	2	2	2	2	2	3	3	3	3	-	-
Minimum water flow rate	l/h	109584	116928	124272	129984	135696	141750	147804	157646	164376	179063	186407	-	-
Maximum water flow rate	l/h	365278	389758	414238	433278	452318	472500	492680	525487	547918	596877	621357	-	-
Connections (in/out)	Type	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	-	-
Sizes (in/out)	Ø	5"	5"	5"	5"	4"+4"	4"+4"	4"+4"	5"+4"	5"+4"	5"+4"	5"+4"	-	-
Water content	l	115	128	140	140	140	140	140	173	173	198	211	-	-

(1) User side water heat exchanger 12 °C/7 °C; Water total recovery 40 °C/45 °C; Outdoor air 35 °C

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Cooling performances with total recovery (1)															
Recovered heating power	kW	391,6	452,7	515,3	577,7	640,0	674,6	709,1	758,9	808,7	868,5	928,2	1017,2	1106,2	1183,6
Total recovery water flow rate	l/h	68052	78679	89559	100397	111235	117240	123244	131902	140560	150943	161326	176788	192250	205709
Total pressure drop total recovery	kPa	41	54	47	61	53	65	54	70	70	57	57	54	46	51
Total recovery															
Type	type	Braze plate													
Number	no.	1	1	1	1	1	1	1	1	1	2	2	2	2	2
Minimum water flow rate	l/h	34026	39340	44780	50199	55618	58620	61622	65951	70280	75472	80663	88394	96125	102855
Maximum water flow rate	l/h	113420	131132	149265	167328	185392	195400	205407	219837	234267	251572	268877	294647	320417	342848
Connections (in/out)	Type	Grooved joints													
Sizes (in/out)	Ø	3"	3"	4"	4"	4"	4"	4"	4"	4"	5"	5"	5"	5"	5"
Water content	l	35	35	45	58	58	58	70	70	70	80	91	103	115	115

(1) User side water heat exchanger 12 °C/7 °C; Water total recovery 40 °C/45 °C; Outdoor air 35 °C

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Cooling performances with total recovery (1)														
Recovered heating power	kW	1261,0	1345,5	1430,1	1495,8	1561,5	1631,2	1700,9	1814,1	-	-	-	-	-
Total recovery water flow rate	l/h	219167	233855	248543	259967	271391	283500	295608	315292	-	-	-	-	-
Total pressure drop total recovery	kPa	51	54	54	65	65	77	77	54	-	-	-	-	-
Total recovery														
Type	type	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	-	-	-	-	-
Number	no.	2	2	2	2	2	2	2	3	-	-	-	-	-
Minimum water flow rate	l/h	109584	116928	124272	129984	135696	141750	147804	157646	-	-	-	-	-
Maximum water flow rate	l/h	365278	389758	414238	433278	452318	472500	492680	525487	-	-	-	-	-
Connections (in/out)	Type	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	Grooved joints	-	-	-	-	-
Sizes (in/out)	Ø	4"+4"	4"+4"	4"+4"	4"+4"	4"+4"	4"+4"	4"+4"	5"+4"	-	-	-	-	-
Water content	l	115	128	140	140	140	140	140	173	-	-	-	-	-

(1) User side water heat exchanger 12 °C/7 °C; Water total recovery 40 °C/45 °C; Outdoor air 35 °C

14 ENERGY DATA

ENERGY INDICES (REG. 2016/2281 EU)

Size			1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
SEER - 12/7 (EN14825:2018) with standard fans (1)																
SEER	°A,E,L,N,U	W/W	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)
Seasonal efficiency	°A,E,L,N,U	%	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)
SEER - (EN14825:2018) 12/7 with inverter fans (1)																
SEER	°	W/W	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)	-(2)
	A	W/W	4,44	4,40	4,55	4,56	4,56	4,56	4,57	4,55	4,56	4,56	4,57	4,57	4,56	4,56
	E	W/W	4,48	4,47	4,57	4,57	4,58	4,58	4,58	4,58	4,58	4,59	4,59	4,59	4,59	4,60
	L	W/W	4,43	4,39	4,53	4,55	4,56	4,56	4,56	4,55	4,56	4,56	4,56	4,56	4,56	4,56
	N	W/W	4,54	4,51	4,60	4,60	4,61	4,59	4,60	4,61	4,60	4,61	4,60	4,60	4,60	4,60
	U	W/W	4,49	4,48	4,57	4,59	4,60	4,59	4,59	4,59	4,59	4,59	4,59	4,59	4,59	4,60
Seasonal efficiency	°	%	-(3)	-(3)	-(3)	-(3)	-(3)	-(3)	-(3)	-(3)	-(3)	-(3)	-(3)	-(3)	-(3)	-(3)
	A	%	174,5%	172,8%	179,0%	179,2%	179,4%	179,4%	179,7%	179,1%	179,5%	179,5%	179,7%	179,6%	179,5%	179,4%
	E	%	176,3%	175,6%	179,6%	179,8%	180,2%	180,0%	180,1%	180,0%	180,2%	180,6%	180,4%	180,4%	180,5%	180,8%
	L	%	174,0%	172,4%	178,3%	179,0%	179,3%	179,2%	179,2%	179,0%	179,4%	179,2%	179,3%	179,3%	179,3%	179,2%
	N	%	178,7%	177,4%	180,8%	180,9%	181,3%	180,7%	180,9%	181,2%	180,9%	181,3%	181,1%	181,1%	181,0%	181,1%
	U	%	176,6%	176,1%	179,8%	180,4%	180,9%	180,5%	180,7%	180,6%	180,7%	180,6%	180,6%	180,4%	180,5%	180,9%
SEPR - (EN14825: 2018) High temperature with standard fans (4)																
SEPR	°	W/W	5,41	5,44	5,37	5,53	5,54	5,51	5,54	5,51	5,53	5,51	5,51	5,52	5,52	5,53
	A	W/W	5,70	5,67	5,57	5,54	5,61	5,60	5,62	5,62	5,65	5,51	5,52	5,53	5,60	5,61
	E	W/W	5,82	5,76	5,80	5,71	5,66	5,79	5,74	5,77	5,73	5,64	5,60	5,63	5,72	5,74
	L	W/W	5,62	5,59	5,48	5,54	5,53	5,52	5,56	5,54	5,60	5,52	5,52	5,52	5,55	5,54
	N	W/W	5,94	5,85	5,98	5,79	5,70	5,78	5,75	5,77	5,70	5,63	5,57	5,65	5,73	5,74
	U	W/W	5,91	5,85	5,89	5,81	5,77	5,88	5,84	5,87	5,83	5,75	5,68	5,74	5,82	5,84
SEPR - (EN14825: 2018) High temperature with inverter fans (4)																
SEPR	°	W/W	5,41	5,44	5,37	5,53	5,54	5,51	5,54	5,51	5,53	5,51	5,51	5,52	5,52	5,53
	A	W/W	5,70	5,67	5,57	5,54	5,61	5,60	5,62	5,62	5,65	5,51	5,52	5,53	5,60	5,61
	E	W/W	5,82	5,76	5,80	5,71	5,66	5,79	5,74	5,77	5,73	5,64	5,60	5,63	5,72	5,74
	L	W/W	5,62	5,59	5,48	5,54	5,53	5,52	5,56	5,54	5,60	5,52	5,52	5,52	5,55	5,54
	N	W/W	5,94	5,85	5,98	5,79	5,70	5,78	5,75	5,77	5,70	5,63	5,57	5,65	5,73	5,74
	U	W/W	5,91	5,85	5,89	5,81	5,77	5,88	5,84	5,87	5,83	5,75	5,68	5,74	5,82	5,84

(1) Calculation performed with FIXED water flow rate and VARIABLE outlet temperature.

(2) Non-compliant with 2016/2281 EU regulation for comfort applications 12°C / 7°C

(3) Not covered by standard (EN14825: 2018 for comfort applications, 12°C / 7°C)

(4) Calculation performed with FIXED water flow rate.

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
SEER - 12/7 (EN14825:2018) with standard fans (1)														
SEER	°A,L	W/W	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)
	E,U	W/W	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	-	-
	N	W/W	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	-	-	-	-
Seasonal efficiency	°A,L	%	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)
	E,U	%	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	-	-
	N	%	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	-	-	-	-	-
SEER - (EN14825:2018) 12/7 with inverter fans (1)														
SEER	°	W/W	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)	- (2)
	A	W/W	4,56	4,56	4,56	4,55	4,57	4,56	4,56	4,56	4,57	4,56	4,56	4,57
	E	W/W	4,58	4,59	4,59	4,59	4,59	4,59	4,59	4,59	4,60	4,58	4,59	-
	L	W/W	4,55	4,56	4,55	4,56	4,56	4,57	4,56	4,57	4,56	4,56	4,56	4,56
	N	W/W	4,60	4,60	4,60	4,60	4,60	4,61	4,60	4,61	-	-	-	-
	U	W/W	4,59	4,59	4,60	4,60	4,60	4,60	4,59	4,60	4,60	4,59	4,59	-
Seasonal efficiency	°	%	- (3)	- (3)	- (3)	- (3)	- (3)	- (3)	- (3)	- (3)	- (3)	- (3)	- (3)	- (3)
	A	%	179,5%	179,4%	179,4%	179,1%	179,8%	179,4%	179,4%	179,2%	179,6%	179,2%	179,4%	179,5%
	E	%	180,3%	180,6%	180,7%	180,6%	180,4%	180,4%	180,6%	180,5%	180,9%	180,2%	180,4%	-
	L	%	179,0%	179,2%	179,1%	179,2%	179,4%	179,6%	179,4%	179,6%	179,3%	179,2%	179,5%	179,4%
	N	%	180,8%	181,0%	181,1%	181,0%	181,1%	181,2%	180,8%	181,4%	-	-	-	-
	U	%	180,4%	180,6%	180,8%	180,9%	180,9%	180,8%	180,6%	180,8%	180,9%	180,6%	180,6%	-
SEPR - (EN14825: 2018) High temperature with standard fans (4)														
SEPR	°	W/W	5,51	5,52	5,53	5,52	5,53	5,52	5,52	5,64	5,51	5,54	5,55	5,51
	A	W/W	5,56	5,60	5,60	5,57	5,60	5,60	5,57	5,66	5,61	5,71	5,69	5,62
	E	W/W	5,75	5,70	5,75	5,62	5,60	5,60	5,74	5,85	5,90	5,70	5,77	-
	L	W/W	5,51	5,53	5,55	5,54	5,56	5,55	5,52	5,64	5,61	5,68	5,66	5,63
	N	W/W	5,71	5,71	5,73	5,79	5,65	5,67	5,65	5,79	-	-	-	-
	U	W/W	5,85	5,81	5,85	5,73	5,71	5,72	5,84	5,93	5,98	5,82	5,87	-
SEPR - (EN14825: 2018) High temperature with inverter fans (4)														
SEPR	°	W/W	5,51	5,52	5,53	5,52	5,53	5,52	5,52	5,64	5,51	5,54	5,55	5,51
	A	W/W	5,56	5,60	5,60	5,57	5,60	5,60	5,57	5,66	5,61	5,71	5,69	5,62
	E	W/W	5,75	5,70	5,75	5,62	5,60	5,60	5,74	5,85	5,90	5,70	5,77	-
	L	W/W	5,51	5,53	5,55	5,54	5,56	5,55	5,52	5,64	5,61	5,68	5,66	5,63
	N	W/W	5,71	5,71	5,73	5,79	5,65	5,67	5,65	5,79	-	-	-	-
	U	W/W	5,85	5,81	5,85	5,73	5,71	5,72	5,84	5,93	5,98	5,82	5,87	-

(1) Calculation performed with FIXED water flow rate and VARIABLE outlet temperature.
(2) Non-compliant with 2016/2281 EU regulation for comfort applications 12°C / 7°C
(3) Not covered by standard (EN14825: 2018 for comfort applications, 12°C / 7°C)
(4) Calculation performed with FIXED water flow rate.

ENERGY DATA (GLOBAL CATALOG)

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Cooling capacity with low leaving water temp (UE n° 2016/2281)															
SEER	°	W/W	-	-	-	-	-	-	-	-	-	-	-	-	-
	A	W/W	4,10	4,08	4,12	4,11	4,14	4,14	4,15	4,14	4,14	4,12	4,13	4,14	4,12
	E	W/W	4,20	4,19	4,23	4,16	4,11	4,19	4,15	4,20	4,17	4,16	4,14	4,18	4,18
	L	W/W	4,02	4,00	3,94	4,11	4,11	4,10	4,12	4,12	4,11	4,11	4,11	4,11	4,11
	N	W/W	4,32	4,28	4,37	4,23	4,15	4,20	4,18	4,22	4,17	4,17	4,15	4,21	4,21
	U	W/W	4,29	4,28	4,32	4,24	4,19	4,27	4,24	4,29	4,26	4,25	4,23	4,27	4,27
ηsc	°	%	-	-	-	-	-	-	-	-	-	-	-	-	-
	A	%	161,00	160,10	161,70	161,40	162,70	162,30	162,80	162,70	162,50	161,90	162,20	162,70	161,60
	E	%	165,10	164,60	166,00	163,20	161,20	162,50	163,00	165,10	163,70	163,50	162,50	164,20	164,40
	L	%	157,70	156,90	154,40	161,40	161,30	161,20	161,60	161,60	161,50	161,40	161,40	161,20	161,00
	N	%	169,60	168,10	171,90	166,00	162,80	164,90	164,10	165,60	163,70	163,70	163,00	165,30	165,40
	U	%	168,70	168,20	169,60	166,70	164,70	166,20	166,60	168,60	167,20	167,10	166,10	167,80	167,90
Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203			
Cooling capacity with low leaving water temp (UE n° 2016/2281)															
SEER	°	W/W	-	-	-	-	-	-	-	-	-	-	-	-	-
	A	W/W	4,14	4,13	4,13	4,12	4,16	4,15	4,12	4,15	4,15	4,15	4,16	4,13	
	E	W/W	4,19	4,14	4,21	4,12	4,14	4,15	4,23	4,26	4,28	4,28	4,14	4,20	
	L	W/W	4,12	4,11	4,11	4,10	4,12	4,11	4,10	4,12	4,12	4,12	4,12	4,10	
	N	W/W	4,17	4,20	4,20	4,23	4,18	4,20	4,18	4,24	-	-	-	-	
	U	W/W	4,28	4,23	4,30	4,21	4,23	4,24	4,32	4,34	4,36	4,23	4,23	4,29	
ηsc	°	%	-	-	-	-	-	-	-	-	-	-	-	-	-
	A	%	162,50	162,30	162,00	161,90	163,20	162,80	161,70	163,00	162,80	163,20	163,20	162,10	
	E	%	164,50	162,50	165,20	161,80	162,70	163,10	166,20	167,40	168,20	168,20	162,60	164,90	
	L	%	161,60	161,20	161,20	161,10	161,70	161,40	161,10	161,70	161,80	161,90	161,90	161,10	
	N	%	163,90	164,90	165,00	166,30	164,30	165,10	164,20	166,70	-	-	-	-	
	U	%	168,00	166,20	168,80	165,20	166,30	166,60	169,80	170,70	171,50	166,20	166,40	168,40	

15 GENERAL TECHNICAL DATA

Size			1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Compressor																
Type	°A,E,L,N,U	type	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw
Compressor regulation	°A,E,L,N,U	Type	modulating	modulating	modulating	modulating	modulating	modulating	modulating	modulating	modulating	modulating	modulating	modulating	modulating	modulating
Number	°A,E,L,N,U	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Circuits	°A,E,L,N,U	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Partialisation of the unit with electronic thermostatic expansion valve	°A,E,L,N,U	%	100-13 %	100-13 %	100-13 %	100-13 %	100-13 %	100-13 %	100-13 %	100-13 %	100-13 %	100-13 %	100-13 %	100-13 %	100-13 %	100-13 %
Refrigerant	°A,E,L,N,U	type	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
Refrigerant load circuit 1 (1)	°	kg	24,0	24,0	24,0	30,0	30,0	35,0	35,0 (2)	35,0	35,0	40,0	46,0	42,5	44,5	51,0
	A	kg	26,5	34,0 (2)	28,0	28,0	34,0	35,0	38,5	40,5	45,0	44,0 (2)	47,0	52,0 (2)	55,0	74,0 (2)
	E	kg	28,0	30,0	41,0 (2)	41,0 (2)	46,0 (2)	43,0	41,0	46,0	45,0	45,0 (2)	57,0	54,0 (2)	74,0 (2)	60,0 (2)
	L	kg	24,0	34,0 (2)	37,0 (2)	28,0	34,0	35,0	38,5	40,0	42,0 (2)	44,0	47,0	52,0 (2)	54,0	56,0 (2)
	N	kg	36,0 (2)	38,0 (2)	44,0 (2)	44,0 (2)	49,0 (2)	53,0 (2)	56,0 (2)	60,0 (2)	64,0 (2)	64,0 (2)	55,0 (2)	72,0 (2)	81,0 (2)	85,0 (2)
	U	kg	32,0 (2)	34,0 (2)	34,0	35,0	46,0 (2)	49,0 (2)	49,0	46,0 (2)	45,0 (2)	60,0 (2)	54,5	58,0	58,0	60,0 (2)
Refrigerant load circuit 2 (1)	°	kg	24,0	25,0	25,0	41,0	33,0	38,0	37,0 (2)	37,5	36,5	50,0	48,0	46,0	46,0	59,0
	A	kg	28,0	34,0 (2)	29,5	36,0	34,0	49,0	40,5	45,0	47,5	52,0 (2)	50,0	55,0 (2)	60,0	81,0 (2)
	E	kg	30,0	31,5	41,0 (2)	46,0 (2)	46,0 (2)	45,0	46,0	52,0	53,0	53,0 (2)	59,0	59,0 (2)	74,0 (2)	77,0 (2)
	L	kg	27,0	34,0 (2)	37,0 (2)	36,0	34,0	40,0	40,5	43,0	46,0 (2)	52,0	50,0	55,0 (2)	58,0	72,0 (2)
	N	kg	36,0 (2)	38,0 (2)	44,0 (2)	49,0 (2)	49,0 (2)	56,0 (2)	56,0 (2)	64,0 (2)	64,0 (2)	69,0 (2)	57,0 (2)	77,0 (2)	81,0 (2)	92,0 (2)
	U	kg	32,0 (2)	34,0 (2)	36,0	41,5	46,0 (2)	53,0 (2)	54,0	52,0 (2)	48,5 (2)	65,0 (2)	59,0	62,0	63,0	77,0 (2)
Refrigerant load circuit 3	°A,E,L,N,U	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil	°A,E,L,N,U	Type	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total oil charge	°A,E,L,N,U	kg	30,0	30,0	30,0	37,0	44,0	41,0	38,0	38,0	38,0	38,0	38,0	49,0	60,0	60,0
System side heat exchanger																
Type	°A,E,L,N,U	type	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube
Number	°A,E,L,N,U	no.	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Minimum water flow rate	°	l/h	26470	30035	34175	38775	42140	45160	46805	49685	52830	58570	62410	66280	70035	77985
	A	l/h	27170	31010	35750	39710	43850	46895	49655	53440	56710	60195	63830	68895	76090	82195
	E	l/h	27510	31720	35940	40660	44250	46750	49885	52940	56120	59845	63730	68540	75865	81905
	L	l/h	26035	29615	33805	36840	42250	44220	46250	50210	51885	57185	61020	66345	71090	78210
	N	l/h	28390	32310	37170	40830	44490	47415	49795	53390	56725	60340	63960	69105	75695	82220
	U	l/h	28500	32550	37190	41455	45410	48600	50820	54640	58110	60950	64610	69805	77660	83955
Maximum water flow rate	°	l/h	75629	85814	97643	110786	120400	129029	133729	141957	150943	167343	178314	189371	200100	222814
	A	l/h	77629	88600	102143	113457	125286	133986	141871	152686	162029	171986	182371	196843	217400	234843
	E	l/h	78600	90629	102686	116171	126429	133571	142529	151257	160343	170986	182086	195829	216757	234014
	L	l/h	74386	84614	96586	105257	120714	126343	132143	143457	148243	163386	174343	189557	203114	223457
	N	l/h	81114	92314	106200	116657	127114	135471	142271	152543	162071	172400	182743	197443	216271	234914
	U	l/h	81429	93000	106257	118443	129743	138857	145200	156114	166029	174143	184600	199443	221886	239871
Water content	°	l	88	84	125	125	125	142	142	262	262	307	307	307	298	298
	A,L	l	88	84	125	142	142	142	262	262	307	307	280	492	492	481
	E,N,U	l	114	142	142	307	307	307	307	298	298	298	280	492	492	481
Sound data calculated in cooling mode (3)																
Sound power level	°	dB(A)	96,8	97,0	97,2	97,6	97,8	98,0	98,2	98,4	98,4	99,4	99,5	99,6	99,8	100,7
	A	dB(A)	97,3	97,4	97,8	97,9	98,2	98,3	98,4	98,8	98,9	99,0	99,1	99,3	99,4	100,1
	E	dB(A)	89,3	89,4	90,2	90,3	90,4	90,8	91,2	91,8	92,0	92,2	92,3	92,8	93,0	93,2
	L	dB(A)	88,9	89,0	89,1	89,2	90,3	90,5	90,6	90,8	90,9	91,0	91,1	91,3	91,4	92,4
	N	dB(A)	90,0	90,4	90,9	91,0	91,1	91,4	91,4	92,1	92,2	92,3	92,4	92,8	93,1	93,3
	U	dB(A)	97,0	97,4	98,0	98,2	98,4	98,8	98,8	99,0	99,1	99,2	99,3	99,9	100,0	100,4
Sound pressure level (10 m)	°	dB(A)	64,5	64,7	64,9	65,2	65,4	65,6	65,8	66,0	66,0	66,9	67,0	67,1	67,3	68,1
	A	dB(A)	64,9	65,0	65,4	65,5	65,7	65,8	65,9	66,2	66,3	66,4	66,5	66,5	66,6	67,2
	E	dB(A)	56,9	57,0	57,7	57,8	57,9	58,2	58,6	59,0	59,2	59,4	59,5	59,9	60,1	60,2
	L	dB(A)	56,5	56,6	56,7	56,8	57,8	58,0	58,1	58,2	58,3	58,4	58,5	58,5	58,6	59,5
	N	dB(A)	57,5	57,9	58,3	58,4	58,5	58,6	58,6	59,2	59,3	59,4	59,5	59,8	60,0	60,1
	U	dB(A)	64,6	65,0	65,5	65,7	65,9	66,2	66,2	66,3	66,3	66,4	66,5	67,0	67,1	67,4
Sound pressure level (1 m)	°A,E,L,N,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(1) The load indicated in the table is an estimated and preliminary value. The final value of the refrigerant load is indicated on the unit's technical label. For further information contact the office.
(2) The refrigerant gas charge is approximate, for more information contact the office.
(3) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification. Sound pressure (cold functioning) measured in free field, 10m away from the unit external surface (in compliance with UNI EN ISO 3744).

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902	
INTEGRATED HYDRONIC KIT: 00																
Hydraulic connections																
Connections (in/out)		°A,E,L,N,U	Type	Grooved joints												
Size (in)	°	Ø	5"	5"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	
	A,L	Ø	5"	5"	6"	6"	6"	6"	6"	6"	6"	6"	6"	8"	8"	8"
	E,N,U	Ø	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	8"	8"	8"
Size (out)	°	Ø	5"	5"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	
	A,L	Ø	5"	5"	6"	6"	6"	6"	6"	6"	6"	6"	6"	8"	8"	8"
	E,N,U	Ø	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	8"	8"	8"

Size			4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Compressor															
Type	°A,E,L,N,U	type	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw
Compressor regulation	°A,L	Type	modulating	modulating	modulating	modulating	modulating	modulating	modulating	modulating	modulating	modulating	modulating	modulating	modulating
	E,U	Type	modulating	modulating	modulating	modulating	modulating	modulating	modulating	modulating	modulating	modulating	modulating	-	-
	N	Type	modulating	modulating	modulating	modulating	modulating	modulating	modulating	modulating	-	-	-	-	-
Number	°A,L	no.	2	2	2	2	2	2	2	3	3	3	3	3	3
	E,U	no.	2	2	2	2	2	2	2	3	3	3	3	-	-
	N	no.	2	2	2	2	2	2	2	3	-	-	-	-	-
Circuits	°A,L	no.	2	2	2	2	2	2	2	3	3	3	3	3	3
	E,U	no.	2	2	2	2	2	2	2	3	3	3	3	-	-
	N	no.	2	2	2	2	2	2	2	3	-	-	-	-	-
Partialisation of the unit with electronic thermostatic expansion valve	°A,L	%	100-13 %	100-13 %	100-13 %	100-13 %	100-13 %	100-13 %	100-13 %	100-8 %	100-8 %	100-8 %	100-8 %	100-8 %	100-8 %
	E,U	%	100-13 %	100-13 %	100-13 %	100-13 %	100-13 %	100-13 %	100-13 %	100-8 %	100-8 %	100-8 %	100-8 %	-	-
	N	%	100-13 %	100-13 %	100-13 %	100-13 %	100-13 %	100-13 %	100-13 %	100-8 %	-	-	-	-	-
Refrigerant	°A,E,L,N,U	type	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
Refrigerant load circuit 1 (1)	°	kg	52,0	55,0	55,0 (2)	63,0 (2)	65,0 (2)	62,0	70,0 (2)	67,0 (2)	55,0	78,0 (2)	62,0 (2)	99,0 (2)	112,0 (2)
	A	kg	62,0	67,0	67,0	70,0	106,0 (2)	82,0	82,0 (2)	74,0 (2)	81,0 (2)	85,0 (2)	70,0	106,0 (2)	80,0
	E	kg	70,0	89,0 (2)	80,0 (2)	100,0 (2)	113,0 (2)	86,0	95,0 (2)	77,0 (2)	89,0 (2)	89,0 (2)	100,0 (2)	-	-
	L	kg	62,0	67,0 (2)	67,0	70,0	106,0 (2)	82,0	82,0 (2)	74,0 (2)	81,0 (2)	85,0 (2)	70,0 (2)	106,0 (2)	80,0
	N	kg	92,0 (2)	99,0 (2)	110,0 (2)	114,0 (2)	128,0 (2)	128,0 (2)	138,0 (2)	85,0 (2)	-	-	-	-	-
	U	kg	70,0	89,0 (2)	80,0	85,0 (2)	113,0 (2)	86,0	95,0	77,0 (2)	89,0 (2)	89,0 (2)	100,0 (2)	-	-
Refrigerant load circuit 2 (1)	°	kg	59,0	64,0	64,0 (2)	70,0 (2)	71,0 (2)	73,0	80,0 (2)	74,0 (2)	61,0	85,0 (2)	70,0 (2)	99,0 (2)	112,0 (2)
	A	kg	70,0	78,0	78,0	82,0	106,0 (2)	99,0	99,0 (2)	81,0 (2)	81,0 (2)	92,0 (2)	75,0	106,0 (2)	95,0
	E	kg	85,0	96,0 (2)	90,0 (2)	110,0 (2)	113,0 (2)	98,0	97,0 (2)	85,0 (2)	89,0 (2)	96,0 (2)	100,0 (2)	-	-
	L	kg	70,0	79,0 (2)	78,0	82,0	106,0 (2)	99,0	99,0 (2)	81,0 (2)	81,0 (2)	92,0 (2)	75,0 (2)	106,0 (2)	95,0
	N	kg	92,0 (2)	107,0 (2)	110,0 (2)	124,0 (2)	128,0 (2)	138,0 (2)	138,0 (2)	92,0 (2)	-	-	-	-	-
	U	kg	85,0	96,0 (2)	90,0	103,0 (2)	113,0 (2)	98,0	97,0	85,0 (2)	89,0 (2)	96,0 (2)	100,0 (2)	-	-
Refrigerant load circuit 3	°	kg	-	-	-	-	-	-	-	74,0 (2)	65,0	85,0 (2)	80,0 (2)	99,0 (2)	112,0 (2)
	A	kg	-	-	-	-	-	-	-	81,0 (2)	81,0 (2)	92,0 (2)	75,0	106,0 (2)	85,0
	E,U	kg	-	-	-	-	-	-	-	85,0 (2)	89,0 (2)	96,0 (2)	100,0 (2)	-	-
	L	kg	-	-	-	-	-	-	-	81,0 (2)	81,0 (2)	92,0 (2)	75,0 (2)	106,0 (2)	85,0
	N	kg	-	-	-	-	-	-	-	92,0 (2)	-	-	-	-	-
Oil	°A,E,L,N,U	Type	-	-	-	-	-	-	-	-	-	-	-	-	-
Total oil charge	°A,L	kg	60,0	60,0	60,0	62,0	64,0	64,0	64,0	60,0	60,0	60,0	60,0	64,0	64,0
	E,U	kg	60,0	60,0	60,0	62,0	64,0	64,0	64,0	60,0	60,0	60,0	60,0	-	-
	N	kg	60,0	60,0	60,0	62,0	64,0	64,0	64,0	60,0	-	-	-	-	-
System side heat exchanger															
Type	°A,E,L,N,U	type	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube
Number	°	no.	1	1	1	1	1	1	1	1	1	1	1	1	1
	A,L	no.	1	1	1	1	1	1	1	2	2	2	2	2	2
	E,U	no.	1	1	1	1	2	2	2	2	2	2	2	-	-
	N	no.	1	2	2	2	2	2	2	2	-	-	-	-	-
Minimum water flow rate	°	l/h	82490	90465	94580	100520	102840	106515	114250	119935	123895	135825	143665	149895	160025
	A	l/h	87925	93330	99840	104395	109785	116370	120705	125810	131810	144805	150870	164215	181230
	E	l/h	87685	93130	99745	103840	108860	113745	119565	126045	131485	143710	150795	-	-
	L	l/h	81725	88855	92675	96610	101860	107955	111485	120045	123615	138110	141925	151260	167495
	N	l/h	87295	93460	100655	104905	109020	113320	117640	124990	-	-	-	-	-
	U	l/h	89790	95070	101940	106190	111960	117085	122135	129550	135890	145705	152525	-	-
Maximum water flow rate	°	l/h	235686	258471	270229	287200	293829	304329	326429	342671	353986	388071	410471	428271	457214
	A	l/h	251214	266657	285257	298271	313671	332486	344871	359457	376600	413729	431057	469186	517800
	E	l/h	250529	266086	284986	296686	311029	324986	341614	360129	375671	410600	430843	-	-
	L	l/h	233500	253871	264786	276029	291029	308443	318529	342986	353186	394600	405500	432171	478557
	N	l/h	249414	267029	287586	299729	311486	323771	336114	357114	-	-	-	-	-
	U	l/h	256543	271629	291257	303400	319886	334529	348957	370143	388257	416300	435786	-	-
Water content	°	l	280	280	492	492	492	481	481	871	871	831	831	831	831
	A,L	l	481	470	470	851	851	838	838	728	728	717	717	1149	1136
	E,U	l	481	470	851	851	596	596	596	728	728	717	1098	-	-
	N	l	481	494	494	545	596	596	596	728	-	-	-	-	-
Sound data calculated in cooling mode (3)															
Sound power level	°	dB(A)	100,8	101,2	101,3	101,7	101,7	101,8	102,1	102,3	102,4	103,0	103,1	103,2	103,3
	A	dB(A)	100,2	100,4	100,8	101,5	101,7	101,9	102,0	102,0	102,1	102,3	102,4	103,3	104,4
	E	dB(A)	93,5	93,6	93,7	93,8	93,9	94,0	94,2	94,3	94,3	94,4	94,8	-	-
	L	dB(A)	92,5	93,0	93,1	93,2	93,7	93,9	94,0	94,2	94,2	94,3	94,3	94,4	95,0
	N	dB(A)	93,4	94,3	94,4	94,8	95,0	95,2	95,3	95,4	-	-	-	-	-
	U	dB(A)	100,7	101,0	101,3	101,6	102,0	102,1	102,2	102,3	102,4	102,4	102,4	-	-
Sound pressure level (10 m)	°	dB(A)	68,2	68,4	68,5	68,8	68,8	68,9	69,1	69,3	69,4	69,9	69,9	70,0	70,1
	A	dB(A)	67,3	67,4	67,8	68,5	68,6	68,7	68,8	68,6	68,7	68,7	68,8	69,6	70,5
	E	dB(A)	60,4	60,5	60,5	60,6	60,5	60,5	60,6	60,7	60,6	60,7	61,0	-	-
	L	dB(A)	59,6	60,0	60,1	60,2	60,6	60,7	60,8	60,8	60,8	60,7	60,7	60,7	61,1
	N	dB(A)	60,2	60,8	60,8	61,1	61,2	61,4	61,5	61,5	-	-	-	-	-
	U	dB(A)	67,6	67,9	68,1	68,4	68,6	68,6	68,6	68,6	68,6	68,7	68,6	-	-
Sound pressure level (1 m)	°A,E,L,N,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-	-

(1) The load indicated in the table is an estimated and preliminary value. The final value of the refrigerant load is indicated on the unit's technical label. For further information contact the office.

(2) The refrigerant gas charge is approximate, for more information contact the office.

(3) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification. Sound pressure (cold functioning) measured in free field, 10m away from the unit external surface (in compliance with UNI EN ISO 3744).

Size			4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
INTEGRATED HYDRONIC KIT: 00															
Hydraulic connections															
Connections (in/out)		° ,A,E,L,N,U	Type	Grooved joints											
Size (in)	°	Ø	6"	6"	8"	8"	8"	8"	8"	10"	10"	10"	10"	10"	10"
	A,L	Ø	8"	8"	8"	10"	10"	10"	10"	-	-	-	-	-	-
	E,U	Ø	8"	8"	10"	10"	-	-	-	-	-	-	-	-	-
Size (out)	N	Ø	8"	-	-	-	-	-	-	-	-	-	-	-	-
	°	Ø	6"	6"	8"	8"	8"	8"	8"	10"	10"	10"	10"	10"	10"
	A,L	Ø	8"	8"	8"	10"	10"	10"	10"	-	-	-	-	-	-
	E,U	Ø	8"	8"	10"	10"	-	-	-	-	-	-	-	-	-
	N	Ø	8"	-	-	-	-	-	-	-	-	-	-	-	-
Module 1															
Size (in)	°	Ø	-	-	-	-	-	-	-	8"	8"	8"	8"	10"	10"
	A,L	Ø	-	-	-	-	6"	6"	6"	8"	8"	8"	10"	-	-
	E,U	Ø	-	6"	6"	6"	6"	6"	6"	8"	-	-	-	-	-
Size (out)	N	Ø	-	6"	6"	6"	6"	6"	6"	8"	-	-	-	-	-
	°	Ø	-	-	-	-	-	-	-	8"	8"	8"	8"	10"	10"
	A,L	Ø	-	-	-	-	6"	6"	6"	8"	8"	8"	10"	-	-
	E,U	Ø	-	6"	6"	6"	6"	6"	6"	8"	-	-	-	-	-
	N	Ø	-	6"	6"	6"	6"	6"	6"	8"	-	-	-	-	-
Module 2															
Size (in)	°	Ø	-	-	-	-	-	-	-	6"	6"	6"	6"	6"	6"
	A,L	Ø	-	-	-	-	6"	6"	6"	6"	6"	6"	6"	-	-
	E,U	Ø	-	6"	6"	6"	6"	6"	6"	6"	-	-	-	-	-
Size (out)	N	Ø	-	6"	6"	6"	6"	6"	6"	6"	-	-	-	-	-
	°	Ø	-	-	-	-	-	-	-	6"	6"	6"	6"	6"	6"
	A,L	Ø	-	-	-	-	6"	6"	6"	6"	6"	6"	6"	-	-
	E,U	Ø	-	6"	6"	6"	6"	6"	6"	6"	-	-	-	-	-
	N	Ø	-	6"	6"	6"	6"	6"	6"	6"	-	-	-	-	-

FANS DATA

Size			1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Fan																
Type	° ,A,E,L,N,U	type	axials													
Fan motor	° ,A,E,L,N,U	type	On-Off													
Number	°	no.	6	6	6	8	8	8	8	8	8	10	10	10	10	12
	A,L	no.	8	8	8	8	10	10	10	12	12	12	12	14	14	16
	E,U	no.	8	8	10	10	10	12	12	14	14	14	14	16	16	18
	N	no.	10	10	12	12	12	14	14	16	16	16	16	18	20	22
Air flow rate	°	m³/h	96000	96000	96000	128000	128000	128000	128000	144000	144000	180000	180000	180000	180000	216000
	A	m³/h	128000	128000	128000	128000	160000	160000	160000	192000	192000	192000	192000	224000	224000	256000
	E	m³/h	92000	92000	115000	115000	115000	138000	138000	161000	161000	161000	161000	184000	184000	207000
	L	m³/h	92000	92000	92000	92000	115000	115000	115000	138000	138000	138000	138000	161000	161000	184000
	N	m³/h	115000	115000	138000	138000	138000	161000	161000	184000	184000	184000	184000	207000	230000	253000
	U	m³/h	128000	128000	160000	160000	160000	192000	192000	224000	224000	224000	224000	256000	256000	288000
High static pressure	° ,A,E,L,N,U	Pa	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total fan input power	°	kW	7,2	7,2	7,2	-	-	-	-	-	-	-	-	-	-	-
	A	kW	9,6	9,6	9,6	9,6	12,0	12,0	12,0	14,4	14,4	14,4	14,4	16,8	16,8	19,2
	E	kW	6,4	6,4	8,0	8,0	8,0	9,6	9,6	11,2	11,2	11,2	11,2	12,8	12,8	14,4
	L	kW	6,4	6,4	6,4	6,4	8,0	8,0	8,0	9,6	9,6	9,6	9,6	11,2	11,2	12,8
	N	kW	8,0	8,0	9,6	9,6	9,6	11,2	11,2	12,8	12,8	12,8	12,8	14,4	16,0	17,6
	U	kW	9,6	9,6	12,0	12,0	12,0	14,4	14,4	16,8	16,8	16,8	16,8	19,2	19,2	21,6
Total fan input current	°	A	16,0	16,0	16,0	-	-	-	-	-	-	-	-	-	-	-
	A,L	A	21,0	21,0	21,0	21,0	26,0	26,0	26,0	31,0	31,0	31,0	31,0	36,0	36,0	42,0
	E,U	A	21,0	21,0	26,0	26,0	26,0	31,0	31,0	36,0	36,0	36,0	36,0	42,0	42,0	47,0
	N	A	26,0	26,0	31,0	31,0	31,0	36,0	36,0	42,0	42,0	42,0	42,0	47,0	52,0	57,0

Size			4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Fan															
Type	°A,E,L,N,U	type	axials												
Fan motor	°A,E,L,N,U	type	On-Off												
Number	°	no.	12	14	14	16	16	16	18	18	18	20	22	22	22
	A,L	no.	16	18	18	18	20	22	22	24	24	28	28	30	34
	E,U	no.	20	20	22	22	24	26	28	28	30	30	32	-	-
	N	no.	22	26	28	30	32	32	32	34	-	-	-	-	-
Air flow rate	°	m³/h	216000	252000	252000	288000	288000	288000	324000	324000	324000	360000	396000	396000	396000
	A	m³/h	256000	288000	288000	324000	360000	396000	396000	384000	384000	448000	448000	480000	612000
	E	m³/h	230000	230000	253000	253000	276000	299000	322000	322000	345000	345000	368000	-	-
	L	m³/h	184000	207000	207000	234000	260000	286000	286000	276000	276000	322000	322000	345000	442000
	N	m³/h	253000	299000	322000	345000	368000	368000	368000	391000	-	-	-	-	-
	U	m³/h	320000	320000	352000	352000	384000	416000	448000	448000	480000	480000	512000	-	-
High static pressure	°A,L	Pa	0	0	0	0	0	0	0	0	0	0	0	0	0
	E,U	Pa	0	0	0	0	0	0	0	0	0	0	0	-	-
	N	Pa	0	0	0	0	0	0	0	0	-	-	-	-	-
Total fan input power	°	kW	-	-	-	-	-	-	-	-	-	-	-	-	-
	A	kW	19,2	21,6	21,6	30,6	34,0	37,4	37,4	28,8	28,8	33,6	33,6	36,0	57,8
	E	kW	16,0	16,0	17,6	17,6	19,2	20,8	22,4	22,4	24,0	24,0	25,6	-	-
	L	kW	12,8	14,4	14,4	18,9	21,0	23,1	23,1	19,2	19,2	22,4	22,4	24,0	35,7
	N	kW	17,6	20,8	22,4	24,0	25,6	25,6	25,6	27,2	-	-	-	-	-
	U	kW	24,0	24,0	26,4	26,4	28,8	31,2	33,6	33,6	36,0	36,0	38,4	-	-
Total fan input current	°	A	-	-	-	-	-	-	-	-	-	-	-	-	-
	A,L	A	42,0	47,0	47,0	65,0	72,0	79,0	79,0	62,0	62,0	73,0	73,0	78,0	122,0
	E,U	A	52,0	52,0	57,0	57,0	62,0	68,0	73,0	73,0	78,0	78,0	83,0	-	-
	N	A	57,0	68,0	73,0	78,0	83,0	83,0	83,0	88,0	-	-	-	-	-

Size			1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Increased fan																
Type	°	type	axials	axials	axials	axials	axials	axials	axials	-	-	-	-	-	-	-
	A,E,L,N,U	type	axials													
Fan motor	°	type	On-Off	On-Off	On-Off	On-Off	On-Off	On-Off	On-Off	On-Off	-	-	-	-	-	-
	A,E,L,N,U	type	On-Off													
Number	°	no.	6	6	6	8	8	8	8	-	-	-	-	-	-	-
	A,L	no.	8	8	8	8	10	10	10	12	12	12	12	14	14	16
	E,U	no.	8	8	10	10	10	12	12	14	14	14	14	16	16	18
	N	no.	10	10	12	12	12	14	14	16	16	16	16	18	20	22
Air flow rate	°	m³/h	96000	96000	96000	128000	128000	128000	128000	-	-	-	-	-	-	-
	A	m³/h	128000	128000	128000	128000	160000	160000	160000	192000	192000	192000	192000	224000	224000	256000
	E	m³/h	92000	92000	115000	115000	115000	138000	138000	161000	161000	161000	161000	184000	184000	207000
	L	m³/h	92000	92000	92000	92000	115000	115000	115000	138000	138000	138000	138000	161000	161000	184000
	N	m³/h	115000	115000	138000	138000	138000	161000	161000	184000	184000	184000	184000	207000	230000	253000
	U	m³/h	128000	128000	160000	160000	160000	192000	192000	224000	224000	224000	224000	256000	256000	288000
High static pressure	°	Pa	50	50	50	50	50	50	50	-	-	-	-	-	-	-
	A,E,L,N,U	Pa	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Total fan input power	°	kW	7,2	7,2	7,2	9,6	9,6	9,6	9,6	-	-	-	-	-	-	-
	A	kW	9,6	9,6	9,6	9,6	12,0	12,0	12,0	14,4	14,4	14,4	14,4	16,8	16,8	19,2
	E	kW	6,4	6,4	8,0	8,0	8,0	9,6	9,6	11,2	11,2	11,2	11,2	12,8	12,8	14,4
	L	kW	6,4	6,4	6,4	6,4	8,0	8,0	8,0	9,6	9,6	9,6	9,6	11,2	11,2	12,8
	N	kW	8,0	8,0	9,6	9,6	9,6	11,2	11,2	12,8	12,8	12,8	12,8	14,4	16,0	17,6
	U	kW	9,6	9,6	12,0	12,0	12,0	14,4	14,4	16,8	16,8	16,8	16,8	19,2	19,2	21,6
Total fan input current	°	A	16,0	16,0	16,0	21,0	21,0	21,0	21,0	-	-	-	-	-	-	-
	A,L	A	21,0	21,0	21,0	21,0	26,0	26,0	26,0	31,0	31,0	31,0	31,0	36,0	36,0	42,0
	E,U	A	21,0	21,0	26,0	26,0	26,0	31,0	31,0	36,0	36,0	36,0	36,0	42,0	42,0	47,0
	N	A	26,0	26,0	31,0	31,0	31,0	36,0	36,0	42,0	42,0	42,0	42,0	47,0	52,0	57,0

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Increased fan														
Type	°	type												
	A,L	type	axials	axials	axials	-	-	-	-	axials	axials	axials	axials	-
	E,U	type	axials	axials	axials	axials	axials	axials	axials	axials	axials	axials	-	-
Fan motor	N	type	axials	axials	axials	axials	axials	axials	axials	axials	-	-	-	-
	°	type												
	A,L	type	On-Off	On-Off	On-Off	-	-	-	-	On-Off	On-Off	On-Off	On-Off	-
Number	E,U	type	On-Off	On-Off	On-Off	On-Off	On-Off	On-Off	On-Off	On-Off	On-Off	On-Off	-	-
	N	type	On-Off	On-Off	On-Off	On-Off	On-Off	On-Off	On-Off	On-Off	-	-	-	-
	°	no.	-	-	-	-	-	-	-	-	-	-	-	-
Air flow rate	A,L	no.	16	18	18	-	-	-	-	24	24	28	28	30
	E,U	no.	20	20	22	22	24	26	28	28	30	30	32	-
	N	no.	22	26	28	30	32	32	32	34	-	-	-	-
	°	m³/h	-	-	-	-	-	-	-	-	-	-	-	-
	A	m³/h	256000	288000	288000	-	-	-	-	384000	384000	448000	448000	480000
High static pressure	E	m³/h	230000	230000	253000	253000	276000	299000	322000	322000	345000	345000	368000	-
	L	m³/h	184000	207000	207000	-	-	-	-	276000	276000	322000	322000	345000
	N	m³/h	253000	299000	322000	345000	368000	368000	368000	391000	-	-	-	-
	U	m³/h	320000	320000	352000	352000	384000	416000	448000	448000	480000	480000	512000	-
	°	Pa	-	-	-	-	-	-	-	-	-	-	-	-
Total fan input power	A,L	Pa	50	50	50	-	-	-	-	50	50	50	50	50
	E,U	Pa	50	50	50	50	50	50	50	50	50	50	50	-
	N	Pa	50	50	50	50	50	50	50	50	-	-	-	-
Total fan input current	°	kW	-	-	-	-	-	-	-	-	-	-	-	-
	A	kW	19,2	21,6	21,6	-	-	-	-	28,8	28,8	33,6	33,6	36,0
	E	kW	16,0	16,0	17,6	17,6	19,2	20,8	22,4	22,4	24,0	24,0	25,6	-
	L	kW	12,8	14,4	14,4	-	-	-	-	19,2	19,2	22,4	22,4	24,0
	N	kW	17,6	20,8	22,4	24,0	25,6	25,6	25,6	27,2	-	-	-	-
Total fan input current	U	kW	24,0	24,0	26,4	26,4	28,8	31,2	33,6	33,6	36,0	36,0	38,4	-
	°	A	-	-	-	-	-	-	-	-	-	-	-	-
	A,L	A	42,0	47,0	47,0	-	-	-	-	62,0	62,0	73,0	73,0	78,0
	E,U	A	52,0	52,0	57,0	57,0	62,0	68,0	73,0	73,0	78,0	78,0	83,0	-
	N	A	57,0	68,0	73,0	78,0	83,0	83,0	83,0	88,0	-	-	-	-



The high fan static pressure value indicated in the table is the maximum. WARNING: The units leave the factory calibrated at 0 Pa.

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Inverter fan															
Type	°A,E,L,U	type													
	N	type													
Fan motor	°A,E,L,U	type													
	N	type	10	10	12	12	12	14	14	16	16	16	16	18	20
Number	°	no.	6	6	6	8	8	8	8	8	8	10	10	10	12
	A	no.	8	8	8	8	10	10	10	10	10	12	12	12	14
	E,U	no.	8	8	10	10	10	12	12	14	14	14	14	16	18
	L	no.	10	10	10	12	12	12	12	14	14	16	16	18	18
	N	no.	115000	115000	138000	138000	138000	161000	161000	184000	184000	184000	184000	207000	230000
Air flow rate	°	m³/h	96000	96000	96000	128000	128000	128000	128000	144000	144000	180000	180000	180000	216000
	A	m³/h	12800	12800	12800	12800	16000	16000	160000	160000	160000	192000	192000	192000	224000
	E	m³/h	92000	92000	115000	115000	115000	138000	138000	161000	161000	161000	161000	184000	207000
	L	m³/h	115000	115000	115000	138000	138000	138000	138000	161000	161000	184000	184000	207000	234000
	N	m³/h	15000	15000	18000	18000	18000	21000	21000	24000	24000	24000	24000	27000	30000
High static pressure	U	m³/h	128000	128000	160000	160000	160000	192000	192000	224000	224000	224000	224000	256000	288000
	°	Pa	120	120	120	120	120	120	120	75	75	75	75	75	75
	A,E,L,N,U	Pa	120	120	120	120	120	120	120	120	120	120	120	120	120
	°	kW	13,8	13,8	13,8	18,4	18,4	18,4	18,4	17,6	17,6	22,0	22,0	22,0	26,4
	A	kW	-	-	-	-	-	-	23,0	23,0	23,0	27,6	27,6	27,6	32,2
Total fan input power	E	kW	12,0	12,0	15,0	15,0	15,0	18,0	18,0	21,0	21,0	21,0	21,0	24,0	27,0
	L	kW	15,0	15,0	15,0	18,0	18,0	18,0	18,0	21,0	21,0	24,0	24,0	27,0	21,6
	N	kW	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,1
	U	kW	18,4	18,4	23,0	23,0	23,0	27,6	27,6	32,2	32,2	32,2	32,2	36,8	41,4
	°	A	23,0	23,0	23,0	30,0	30,0	30,0	30,0	29,0	29,0	36,0	36,0	36,0	43,0
Total fan input current	A	A	-	-	-	-	-	-	38,0	38,0	38,0	46,0	46,0	46,0	53,0
	E	A	19,0	19,0	24,0	24,0	24,0	29,0	29,0	34,0	34,0	34,0	34,0	39,0	44,0
	L	A	24,0	24,0	24,0	29,0	29,0	29,0	29,0	34,0	34,0	39,0	39,0	44,0	36,0
	N	A	120,0	120,0	120,0	120,0	120,0	120,0	120,0	120,0	120,0	120,0	120,0	120,0	120,0
	U	A	30,0	30,0	38,0	38,0	38,0	46,0	46,0	53,0	53,0	53,0	53,0	61,0	68,0

Size			4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Inverter fan															
Type	°A	type													
	E,U	type	axials	axials	axials	axials	axials	axials	axials	axials	axials	axials	axials	-	-
	L	type	axials	axials	axials	axials	axials	axials	axials	axials	axials	-	-	-	-
Fan motor	N	type	Inverter	Inverter	Inverter	Inverter	Inverter	Inverter	Inverter	Inverter	-	-	-	-	-
	°A	type													
	E,U	type	Inverter	Inverter	Inverter	Inverter	Inverter	Inverter	Inverter	Inverter	Inverter	Inverter	Inverter	-	-
Number	L	type	Inverter	Inverter	Inverter	Inverter	Inverter	Inverter	Inverter	Inverter	-	-	-	-	-
	N	type	22	26	28	30	32	32	32	34	-	-	-	-	-
	°	no.	12	14	14	16	16	16	18	18	18	20	22	22	22
Air flow rate	A	no.	14	16	16	18	18	18	20	22	22	24	24	28	28
	E,U	no.	20	20	22	22	24	26	28	28	30	30	32	-	-
	L	no.	20	22	22	24	24	28	28	30	34	-	-	-	-
High static pressure	N	no.	253000	299000	322000	345000	368000	368000	368000	391000	-	-	-	-	-
	°	m³/h	216000	252000	252000	288000	288000	288000	324000	324000	324000	360000	396000	396000	396000
	A	m³/h	224000	256000	256000	288000	288000	324000	360000	396000	396000	384000	384000	448000	448000
Total fan input power	E	m³/h	230000	230000	253000	253000	276000	299000	322000	322000	345000	345000	368000	-	-
	L	m³/h	260000	286000	286000	276000	276000	322000	322000	345000	442000	-	-	-	-
	N	m³/h	33000	39000	42000	45000	48000	48000	48000	51000	-	-	-	-	-
Total fan input current	U	m³/h	320000	320000	352000	352000	384000	416000	448000	448000	480000	480000	512000	-	-
	°	Pa	75	75	75	75	75	75	75	75	75	75	75	75	75
	A,L	Pa	120	120	120	75	75	75	75	120	120	120	120	120	75
Total fan input power	E,U	Pa	120	120	120	120	120	120	120	120	120	120	120	-	-
	N	Pa	120	120	120	120	120	120	120	120	-	-	-	-	-
	°	kW	26,4	30,8	30,8	35,2	35,2	35,2	39,6	39,6	39,6	44,0	48,4	48,4	48,4
Total fan input current	A	kW	32,2	36,8	36,8	41,4	41,4	39,6	44,0	48,4	48,4	55,2	55,2	64,4	64,4
	E	kW	30,0	30,0	33,0	33,0	36,0	39,0	42,0	42,0	45,0	45,0	48,0	-	-
	L	kW	24,0	26,4	26,4	36,0	36,0	42,0	42,0	45,0	40,8	-	-	-	-
Total fan input current	N	kW	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	-	-	-	-	-
	U	kW	46,0	46,0	50,6	50,6	55,2	59,8	64,4	64,4	69,0	69,0	73,6	-	-
	°	A	43,0	50,0	50,0	58,0	58,0	58,0	65,0	65,0	65,0	72,0	79,0	79,0	79,0
Total fan input current	A	A	53,0	61,0	61,0	68,0	68,0	65,0	72,0	79,0	79,0	91,0	91,0	106,0	106,0
	E	A	49,0	49,0	53,0	53,0	58,0	63,0	68,0	68,0	73,0	73,0	78,0	-	-
	L	A	40,0	44,0	44,0	58,0	58,0	68,0	68,0	73,0	68,0	-	-	-	-
Total fan input current	N	A	120,0	120,0	120,0	120,0	120,0	120,0	120,0	120,0	-	-	-	-	-
	U	A	76,0	76,0	84,0	84,0	91,0	99,0	106,0	106,0	114,0	114,0	122,0	-	-

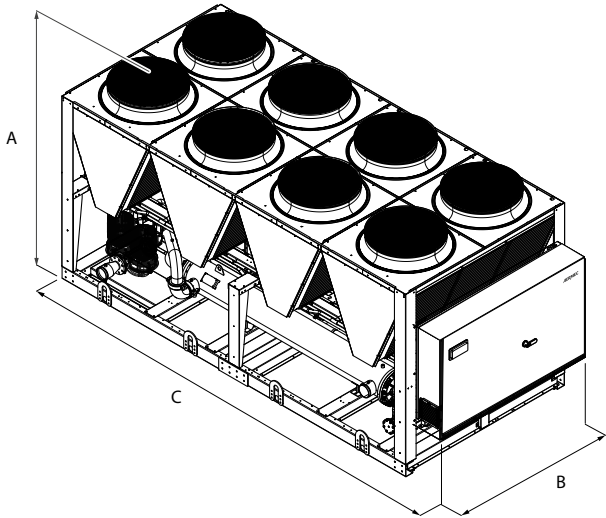
⚠ The high fan static pressure value indicated in the table is the maximum. **WARNING:** The units leave the factory calibrated at 0 Pa.

ELECTRIC DATA

Size			1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Electric data																
Maximum current (FLA)	°	A	229,0	257,0	284,0	324,0	357,0	379,0	400,0	433,0	458,0	466,0	466,0	514,0	562,0	619,0
	A,L	A	235,0	263,0	291,0	324,0	364,0	385,0	406,0	437,0	462,0	462,0	462,0	516,0	564,0	619,0
	E,U	A	235,0	263,0	297,0	330,0	364,0	391,0	413,0	444,0	468,0	468,0	468,0	523,0	571,0	625,0
	N	A	242,0	270,0	303,0	337,0	370,0	398,0	419,0	450,0	475,0	475,0	475,0	529,0	583,0	644,0
Peak current (LRA)	°	A	251,0	292,0	335,0	380,0	403,0	450,0	467,0	502,0	512,0	521,0	521,0	645,0	685,0	814,0
	A,L	A	257,0	299,0	342,0	380,0	409,0	456,0	473,0	507,0	517,0	517,0	517,0	647,0	687,0	814,0
	E,U	A	257,0	299,0	348,0	386,0	409,0	462,0	480,0	513,0	523,0	523,0	523,0	653,0	693,0	821,0
	N	A	263,0	305,0	354,0	392,0	415,0	469,0	486,0	519,0	529,0	529,0	529,0	660,0	706,0	839,0

Size			4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603	
Electric data																
Maximum current (FLA)	°	A	667,0	714,0	753,0	805,0	848,0	882,0	924,0	949,0	997,0	1084,0	1137,0	1266,0	1368,0	
	A,L	A	667,0	712,0	751,0	813,0	865,0	913,0	947,0	955,0	1003,0	1094,0	1133,0	1268,0	1406,0	
	E,U	A	679,0	718,0	770,0	813,0	862,0	902,0	943,0	968,0	1022,0	1100,0	1145,0	-	-	
	N	A	692,0	743,0	789,0	838,0	887,0	921,0	955,0	987,0	-	-	-	-	-	
Peak current (LRA)	°	A	841,0	914,0	936,0	1100,0	1147,0	1259,0	1264,0	1038,0	1065,0	1160,0	1197,0	1446,0	1552,0	
	A,L	A	841,0	911,0	934,0	1108,0	1164,0	1290,0	1287,0	1044,0	1071,0	1170,0	1193,0	1448,0	1590,0	
	E,U	A	854,0	918,0	953,0	1108,0	1161,0	1279,0	1283,0	1056,0	1090,0	1176,0	1205,0	-	-	
	N	A	866,0	943,0	972,0	1133,0	1186,0	1298,0	1295,0	1076,0	-	-	-	-	-	

DIMENSIONS



Size			1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Dimensions and weights																
A	°A,E,L,N,U	mm	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450
B	°A,E,L,N,U	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
C	°	mm	3970	3970	3970	5160	5160	5160	5160	5160	5160	6350	6350	6350	6350	7140
	A,L	mm	5160	5160	5160	5160	6350	6350	6350	7140	7140	7140	7140	8330	8330	9520
	E,U	mm	5160	5160	6350	6350	6350	7140	7140	8330	8330	8330	8330	9520	9520	10710
	N	mm	6350	6350	7140	7140	7140	8330	8330	9520	9520	9520	9520	10710	11900	13090

Size			4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603	
Dimensions and weights																
A	°A,L	mm	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450
	E,U	mm	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	-	-
	N	mm	2450	2450	2450	2450	2450	2450	2450	2450	2450	-	-	-	-	-
B	°A,L	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
	E,U	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	-	-
	N	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	-	-	-	-	-
C	°	mm	7140	8330	8330	9520	9520	9520	10710	11110	11110	11900	13090	13090	13090	13090
	A,L	mm	9520	10710	10710	10710	11900	13090	13090	14280	14280	16660	16660	16660	17850	20230
	E,U	mm	11900	11900	13090	13090	14280	15470	16660	16660	17850	17850	17850	19040	-	-
	N	mm	13090	15470	16660	17850	19040	19040	19040	20230	20230	-	-	-	-	-

For transport reasons, the units with the depth of more than 13090 mm are shipped separately. For more information, please refer to the technical manual and / or installation.

WEIGHTS

Size			1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
INTEGRATED HYDRONIC KIT: 00																
Weights																
Empty weight	°	kg	3660	3702	3831	4670	5040	5053	5077	5273	5396	5922	5977	6410	6901	7477
	A,L	kg	4213	4249	4373	4699	5472	5488	5691	6228	6424	6477	6577	7656	8129	8647
	E,U	kg	4373	4394	4840	5431	5785	6333	6356	6805	6896	6914	6953	8149	8660	9431
	N	kg	4791	4812	5373	5965	6318	6741	6764	7254	7346	7416	7508	8882	9759	10383
Weight functioning	°	kg	3753	3790	3962	4801	5171	5202	5226	5548	5671	6244	6299	6732	7214	7790
	A,L	kg	4306	4337	4505	4848	5621	5637	5966	6503	6747	6799	6871	8173	8645	9152
	E,U	kg	4505	4543	4989	5753	6107	6655	6679	7118	7209	7279	7352	8718	9177	9936
	N	kg	4923	4962	5522	6287	6641	7063	7086	7567	7659	7729	7802	9399	10276	10888
Size			4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603	
INTEGRATED HYDRONIC KIT: 00																
Weights																
Empty weight	°	kg	7574	7993	8302	8826	8954	9017	9719	11612	11688	12216	12761	13047	13176	
	A,L	kg	8710	9428	9481	9902	10433	11018	11060	13354	13417	14572	14625	15743	16934	
	E,U	kg	9922	9983	10887	11013	11820	12261	12701	14514	15005	15119	16034	-	-	
	N	kg	10456	11646	12355	12989	12721	13666	13709	16119	-	-	-	-	-	
Weight functioning	°	kg	7868	8287	8819	9342	9471	9522	10224	12527	12603	13089	13633	13920	14048	
	A,L	kg	9215	9922	9974	10795	11327	11898	11940	14121	14184	15328	15381	16950	18126	
	E,U	kg	10427	10476	11781	11907	12446	12886	13327	15281	15772	15875	17190	-	-	
	N	kg	10961	12171	12880	13564	14249	14292	14726	16937	-	-	-	-	-	

16 MINIMUM TECHNICAL SPACES

For all units, it is fundamental to respect the minimum distances in order to guarantee optimal ventilation to the finned heat exchanger coils to avoid the following:

- The generation of hazardous atmospheres in the case of refrigerant gas leaks;
- Return of hot air;
- Insufficient air flow to the finned heat exchanger coils.



Each side of the unit must have space to allow all routine and extraordinary maintenance to be performed.

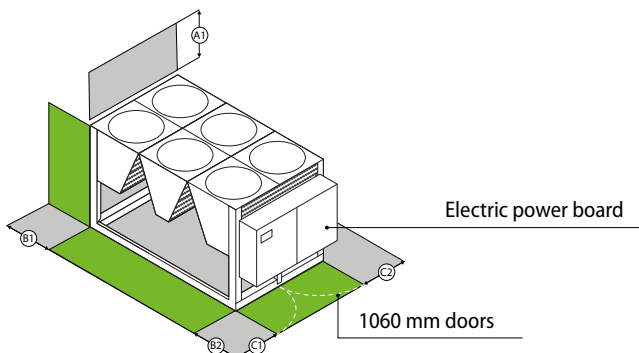


The air suction inlet and the vertical air exhaust must not be obstructed.

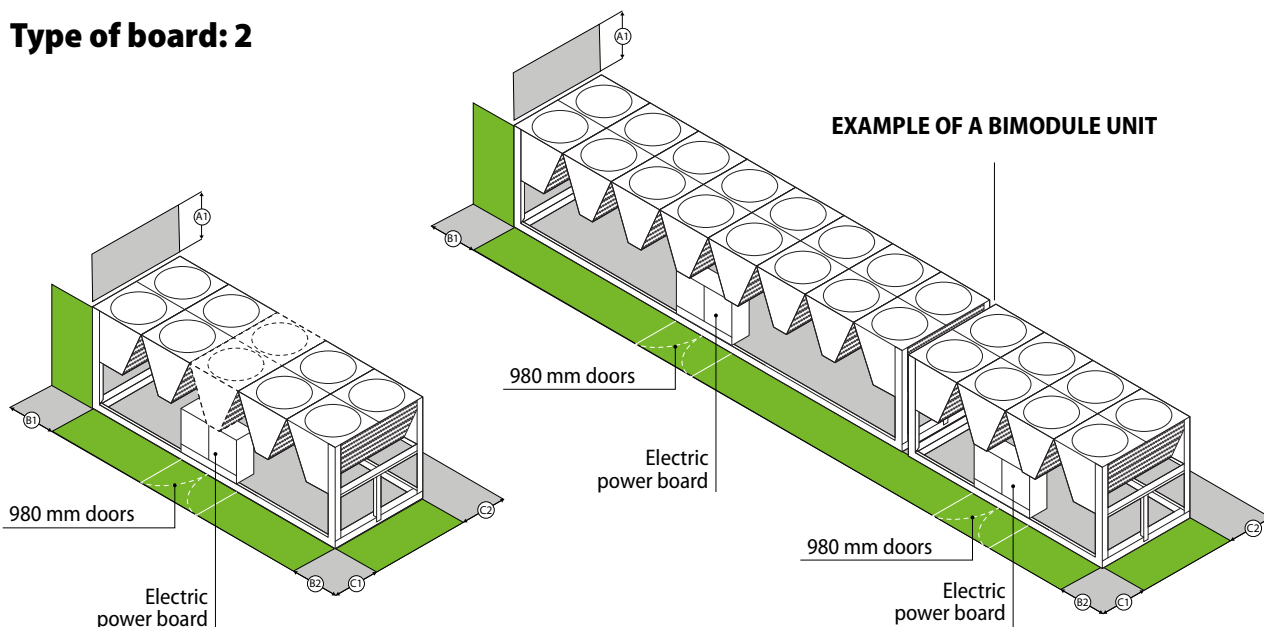
The following images indicate the minimum required space:

SINGLE INSTALLATION

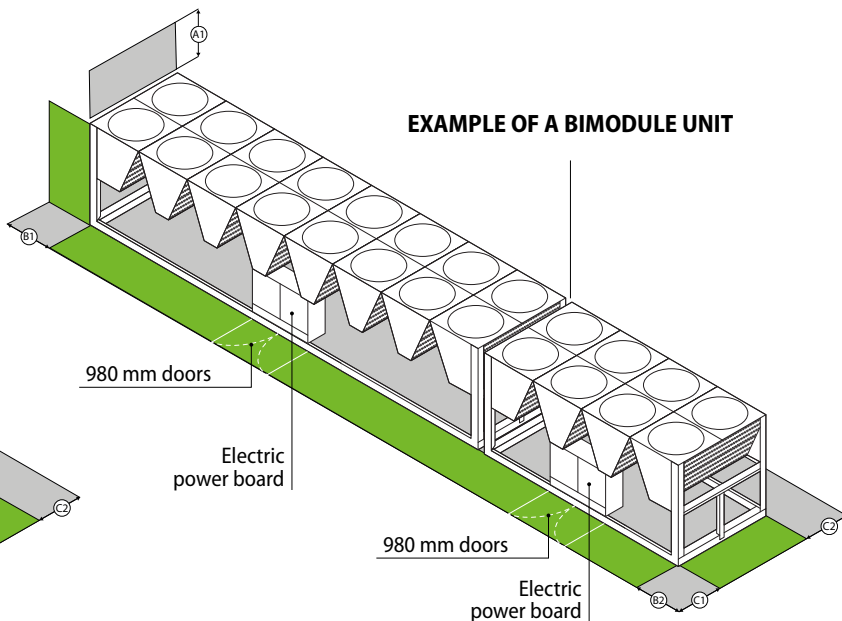
Type of board: 1



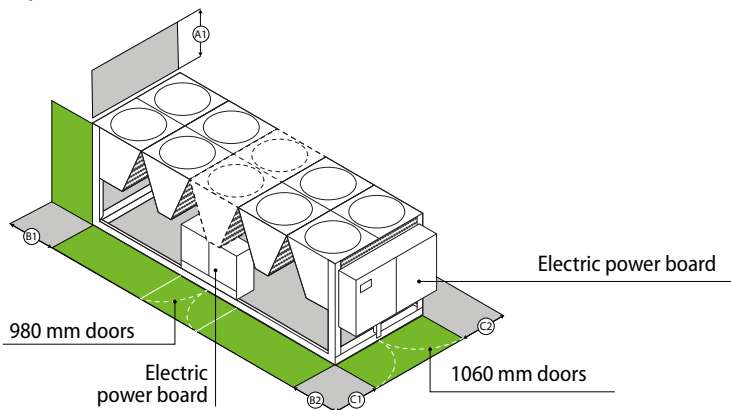
Type of board: 2



EXAMPLE OF A BIMODULE UNIT

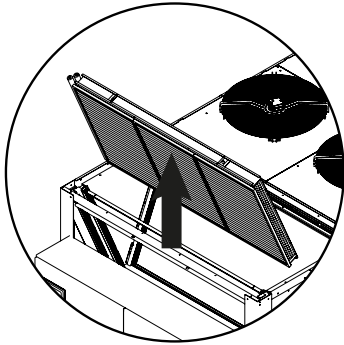


Type of board: 3

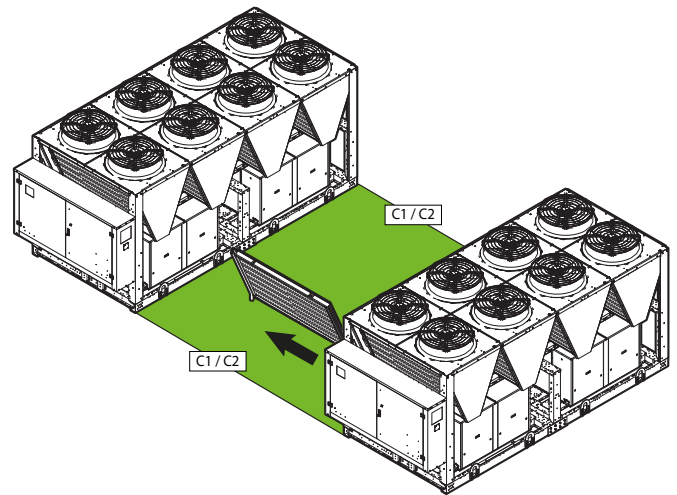
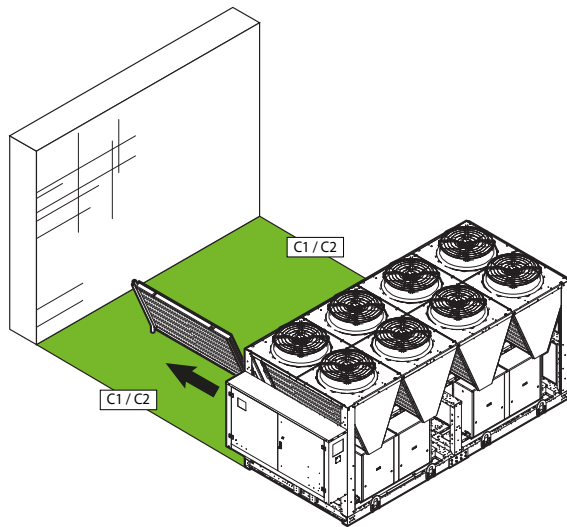


■ C1 / C2 = Minimum technical space to be ensured for the correct operation of the unit and for any maintenance.

⚠ ATTENTION that with this space, the condensing coil can only be extracted from the top; to remove it laterally, at least 2300 mm must be left (Side battery removal - Figure 1).



Side battery removal - Figure 1



C1 / C2 = 2300 mm

NSM °

Unit NSM	Version	Modules	V-block no.	Fans no.	Circuits	Type of board	A1 MM	B1 MM	B2 MM	C1 MM	C2 MM
1402	°	single module	3	6	Dual-circuit	1	3000	800	1100	1000	1000
1602	°	single module	3	6	Dual-circuit	1	3000	800	1100	1000	1000
1802	°	single module	3	6	Dual-circuit	1	3000	800	1100	1000	1000
2002	°	single module	4	8	Dual-circuit	1	3000	800	1100	1000	1000
2202	°	single module	4	8	Dual-circuit	1	3000	800	1100	1000	1000
2352	°	single module	4	8	Dual-circuit	1	3000	800	1100	1000	1000
2502	°	single module	4	8	Dual-circuit	1	3000	800	1100	1000	1000
2652	°	single module	4	8	Dual-circuit	1	3000	800	1100	1000	1000
2802	°	single module	4	8	Dual-circuit	1	3000	800	1100	1000	1000
3002	°	single module	5	10	Dual-circuit	1	3000	800	1100	1000	1000
3202	°	single module	5	10	Dual-circuit	1	3000	800	1100	1000	1000
3402	°	single module	5	10	Dual-circuit	1	3000	800	1100	1000	1000
3602	°	single module	5	10	Dual-circuit	1	3000	800	1100	1000	1000
3902	°	single module	6	12	Dual-circuit	2	3000	800	800	1000	1000
4202	°	single module	6	12	Dual-circuit	2	3000	800	800	1000	1000
4502	°	single module	7	14	Dual-circuit	2	3000	800	800	1000	1000
4802	°	single module	7	14	Dual-circuit	2	3000	800	800	1000	1000
5202	°	single module	8	16	Dual-circuit	2	3000	800	800	1000	1000
5602	°	single module	8	16	Dual-circuit	2	3000	800	800	1000	1000
6002	°	single module	8	16	Dual-circuit	2	3000	800	800	1000	1000
6402	°	single module	9	18	Dual-circuit	2	3000	800	800	1000	1000
6503	°	single module	9	18	three-circuit	3	3000	800	1100	1000	1000
6703	°	single module	9	18	three-circuit	3	3000	800	1100	1000	1000
6903	°	single module	10	20	three-circuit	2	3000	800	800	1000	1000
7203	°	single module	11	22	three-circuit	2	3000	800	800	1000	1000
8403	°	single module	11	22	three-circuit	2	3000	800	800	1000	1000
9603	°	single module	11	22	three-circuit	2	3000	800	800	1000	1000

Unit NSM	Version	Modules	V-block	Fans	Circuits	Type of board	A1	B1	B2	C1	C2
			no.	no.			MM	MM	MM	MM	MM
1402	E	single module	4	8	Dual-circuit	1	3000	800	1100	1000	1000
1602	E	single module	4	8	Dual-circuit	1	3000	800	1100	1000	1000
1802	E	single module	5	10	Dual-circuit	1	3000	800	1100	1000	1000
2002	E	single module	5	10	Dual-circuit	1	3000	800	1100	1000	1000
2202	E	single module	5	10	Dual-circuit	1	3000	800	1100	1000	1000
2352	E	single module	6	12	Dual-circuit	2	3000	800	800	1000	1000
2502	E	single module	6	12	Dual-circuit	2	3000	800	800	1000	1000
2652	E	single module	7	14	Dual-circuit	2	3000	800	800	1000	1000
2802	E	single module	7	14	Dual-circuit	2	3000	800	800	1000	1000
3002	E	single module	7	14	Dual-circuit	2	3000	800	800	1000	1000
3202	E	single module	7	14	Dual-circuit	2	3000	800	800	1000	1000
3402	E	single module	8	16	Dual-circuit	2	3000	800	800	1000	1000
3602	E	single module	8	16	Dual-circuit	2	3000	800	800	1000	1000
3902	E	single module	9	18	Dual-circuit	2	3000	800	800	1000	1000
4202	E	single module	10	20	Dual-circuit	2	3000	800	800	1000	1000
4502	E	single module	10	20	Dual-circuit	2	3000	800	800	1000	1000
4802	E	single module	11	22	Dual-circuit	2	3000	800	800	1000	1000
5202	E	single module	11	22	Dual-circuit	2	3000	800	800	1000	1000
5602	E	module 1	6	12	Single Circuit	2	3000	-	800	1000	1000
		module 2	6	12	Single Circuit	2	3000	800	-	1000	1000
6002	E	module 1	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.
		module 2	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.
6402	E	module 1	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.
		module 2	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.
6503	E	module 1	9	18	Dual-circuit	2	3000	-	800	1000	1000
		module 2	5	10	Single Circuit	2	3000	800	-	1000	1000
6703	E	module 1	10	20	Dual-circuit	2	3000	-	800	1000	1000
		module 2	5	10	Single Circuit	2	3000	800	-	1000	1000
6903	E	module 1	10	20	Dual-circuit	2	3000	-	800	1000	1000
		module 2	5	10	Single Circuit	2	3000	800	-	1000	1000
7203	E	module 1	11	22	Dual-circuit	2	3000	-	800	1000	1000
		module 2	5	10	Single Circuit	2	3000	800	-	1000	1000

c.s. = contact the factory

NSM U

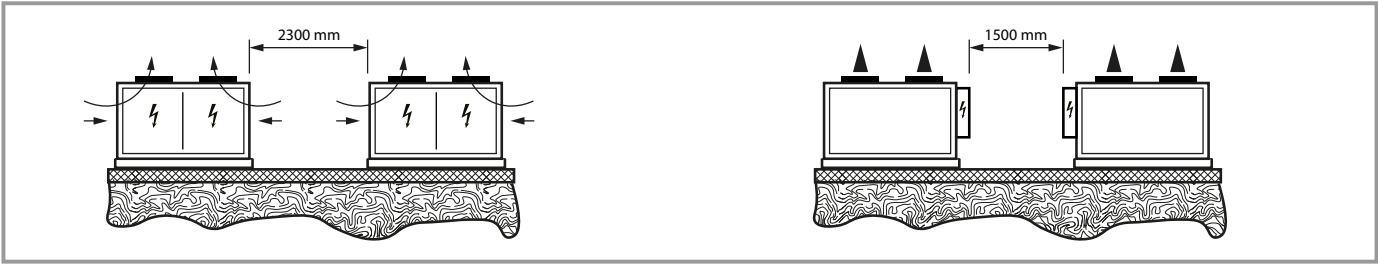
Unit NSM	Version	Modules	V-block	Fans	Circuits	Type of board	A1	B1	B2	C1	C2
			no.	no.			MM	MM	MM	MM	MM
1402	U	single module	4	8	Dual-circuit	1	3000	800	1100	1000	1000
1602	U	single module	4	8	Dual-circuit	1	3000	800	1100	1000	1000
1802	U	single module	5	10	Dual-circuit	1	3000	800	1100	1000	1000
2002	U	single module	5	10	Dual-circuit	1	3000	800	1100	1000	1000
2202	U	single module	5	10	Dual-circuit	1	3000	800	1100	1000	1000
2352	U	single module	6	12	Dual-circuit	2	3000	800	800	1000	1000
2502	U	single module	6	12	Dual-circuit	2	3000	800	800	1000	1000
2652	U	single module	7	14	Dual-circuit	2	3000	800	800	1000	1000
2802	U	single module	7	14	Dual-circuit	2	3000	800	800	1000	1000
3002	U	single module	7	14	Dual-circuit	2	3000	800	800	1000	1000
3202	U	single module	7	14	Dual-circuit	2	3000	800	800	1000	1000
3402	U	single module	8	16	Dual-circuit	2	3000	800	800	1000	1000
3602	U	single module	8	16	Dual-circuit	2	3000	800	800	1000	1000
3902	U	single module	9	18	Dual-circuit	2	3000	800	800	1000	1000
4202	U	single module	10	20	Dual-circuit	2	3000	800	800	1000	1000
4502	U	single module	10	20	Dual-circuit	2	3000	800	800	1000	1000
4802	U	single module	11	22	Dual-circuit	2	3000	800	800	1000	1000
5202	U	single module	11	22	Dual-circuit	2	3000	800	800	1000	1000
5602	U	module 1	6	12	Single Circuit	2	3000	-	800	1000	1000
		module 2	6	12	Single Circuit	2	3000	800	-	1000	1000
6002	U	module 1	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.
		module 2	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.
6402	U	module 1	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.
		module 2	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.
6503	U	module 1	9	18	Dual-circuit	2	3000	-	800	1000	1000
		module 2	5	10	Single Circuit	2	3000	800	-	1000	1000
6703	U	module 1	10	20	Dual-circuit	2	3000	-	800	1000	1000
		module 2	5	10	Single Circuit	2	3000	800	-	1000	1000
6903	U	module 1	10	20	Dual-circuit	2	3000	-	800	1000	1000
		module 2	5	10	Single Circuit	2	3000	800	-	1000	1000
7203	U	module 1	11	22	Dual-circuit	2	3000	-	800	1000	1000
		module 2	5	10	Single Circuit	2	3000	800	-	1000	1000

Unit NSM	Version	Modules	V-block	Fans	Circuits	Type of board	A1	B1	B2	C1	C2
			no.	no.			MM	MM	MM	MM	MM
1402	N	single module	5	10	Dual-circuit	1	3000	800	1100	1000	1000
1602	N	single module	5	10	Dual-circuit	1	3000	800	1100	1000	1000
1802	N	single module	6	12	Dual-circuit	2	3000	800	800	1000	1000
2002	N	single module	6	12	Dual-circuit	2	3000	800	800	1000	1000
2202	N	single module	6	12	Dual-circuit	2	3000	800	800	1000	1000
2352	N	single module	7	14	Dual-circuit	2	3000	800	800	1000	1000
2502	N	single module	7	14	Dual-circuit	2	3000	800	800	1000	1000
2652	N	single module	8	16	Dual-circuit	2	3000	800	800	1000	1000
2802	N	single module	8	16	Dual-circuit	2	3000	800	800	1000	1000
3002	N	single module	8	16	Dual-circuit	2	3000	800	800	1000	1000
3202	N	single module	8	16	Dual-circuit	2	3000	800	800	1000	1000
3402	N	single module	9	18	Dual-circuit	2	3000	800	800	1000	1000
3602	N	single module	10	20	Dual-circuit	2	3000	800	800	1000	1000
3902	N	single module	11	22	Dual-circuit	2	3000	800	800	1000	1000
4202	N	single module	11	22	Dual-circuit	2	3000	800	800	1000	1000
4502	N	module 1	6	12	Single Circuit	2	3000	-	800	1000	1000
		module 2	7	14	Single Circuit	2	3000	800	-	1000	1000
4802	N	module 1	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.
		module 2	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.
5202	N	module 1	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.
		module 2	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.
5602	N	module 1	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.
		module 2	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.
6002	N	module 1	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.
		module 2	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.
6402	N	module 1	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.
		module 2	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.
6503	N	module 1	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.
		module 2	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.	c.s.

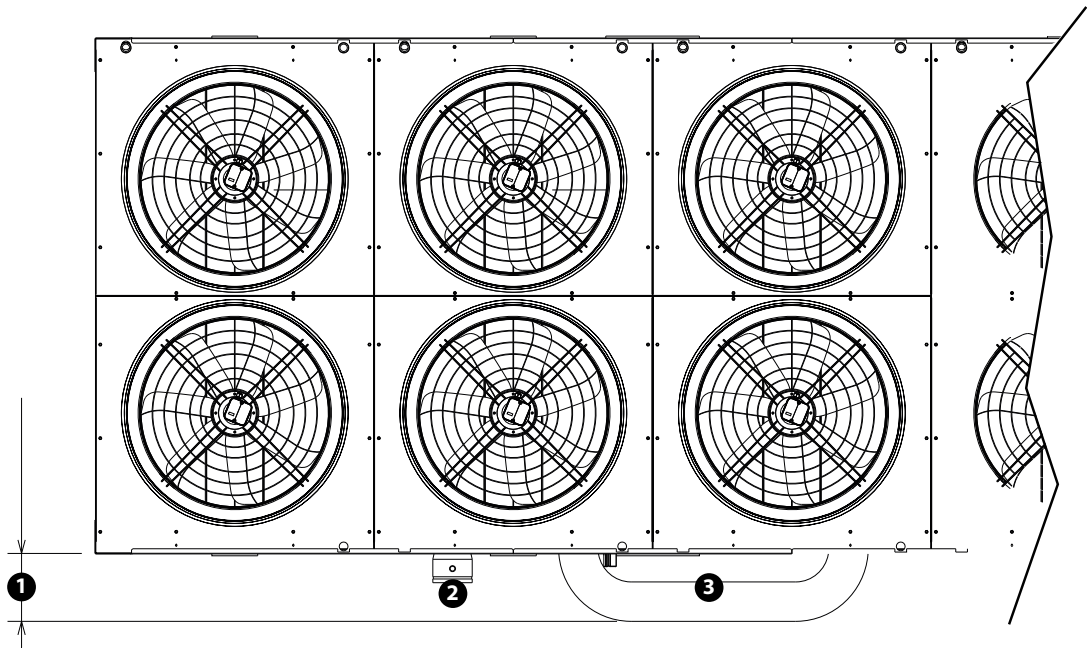
c.s. = contact the factory

MULTIPLE INSTALLATION

The minimum distances indicated above guarantee unit operation in the majority of applications. There are however specific situations that involve the installation of multiple units:



PIPES PROTRUSION



- 1 Maximum protrusion
- 2 External connection (INCLUDED IN THE SUPPLY)
- 3 Connection pipe between the pumping assembly and the heat exchanger (INCLUDED IN THE SUPPLY)

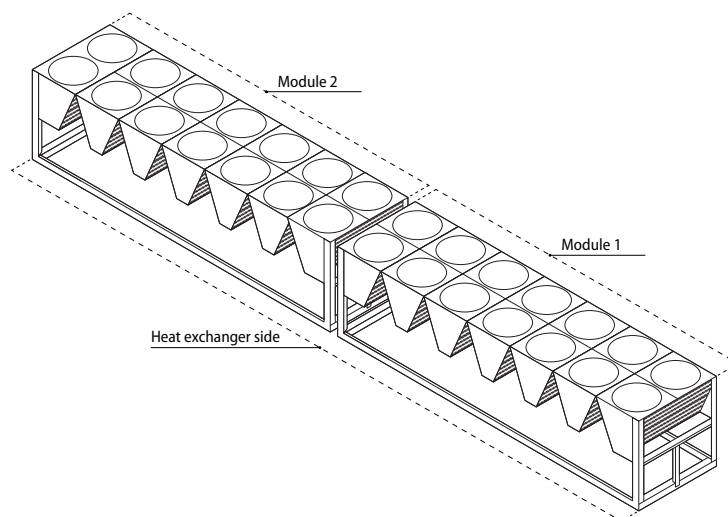
Warning: The protruding parts indicated in the drawing are INCLUDED IN THE SUPPLY for configurations with the hydronic kit.

The following table specifies the relative sizes and versions:

NSM with HYDRONIC KIT				
Size	Version	Maximum protrusion		
		Single module unit	Bimodule unit	
			Module 1	Module 2
		MM	MM	MM
2352	N	310	-	-
2502	N	310	-	-
2652	E - U	310	-	-
2652	N	310	-	-
2802	E - U	310	-	-
2802	N	310	-	-
3002	E - U	310	-	-
3002	N	310	-	-
3202	E - U	310	-	-
3202	N	310	-	-
3402	L - A	310	-	-
3402	E - U	310	-	-
3402	N	380	-	-
3602	L - A	310	-	-
3602	E - U	310	-	-
3602	N	380	-	-
3902	L - A	310	-	-
3902	E - U	380	-	-
3902	N	380	-	-
4202	L - A	310	-	-
4202	E - U	380	-	-
4202	N	380	-	-
4502	°	310	-	-
4502	L - A	380	-	-
4502	E - U	380	-	-
4502	N	-	no protrusion	200

NSM with HYDRONIC KIT				
Size	Version	Maximum protrusion		
		Single module unit	Bimodule unit	
			Module 1	Module 2
		MM	MM	MM
4802	°	310	-	-
4802	L - A	380	-	-
4802	E - U	380	-	-
4802	N	-	200	200
5202	°	310	-	-
5202	L - A	380	-	-
5202	E - U	380	-	-
5202	N	-	200	200
5602	°	310	-	-
5602	L - A	380	-	-
5602	N	-	200	200
6002	°	310	-	-
6002	L - A	380	-	-
6002	E - U	-	no protrusion	200
6002	N	-	200	200
6402	°	380	-	-
6402	L - A	380	-	-
6402	E - U	-	200	200
6402	N	-	200	200
6503	°	380	-	-
6703	°	380	-	-
6903	°	380	-	-
7203	°	380	-	-
8403	°	380	-	-
9603	°	380	-	-

Example of a bimodule unit

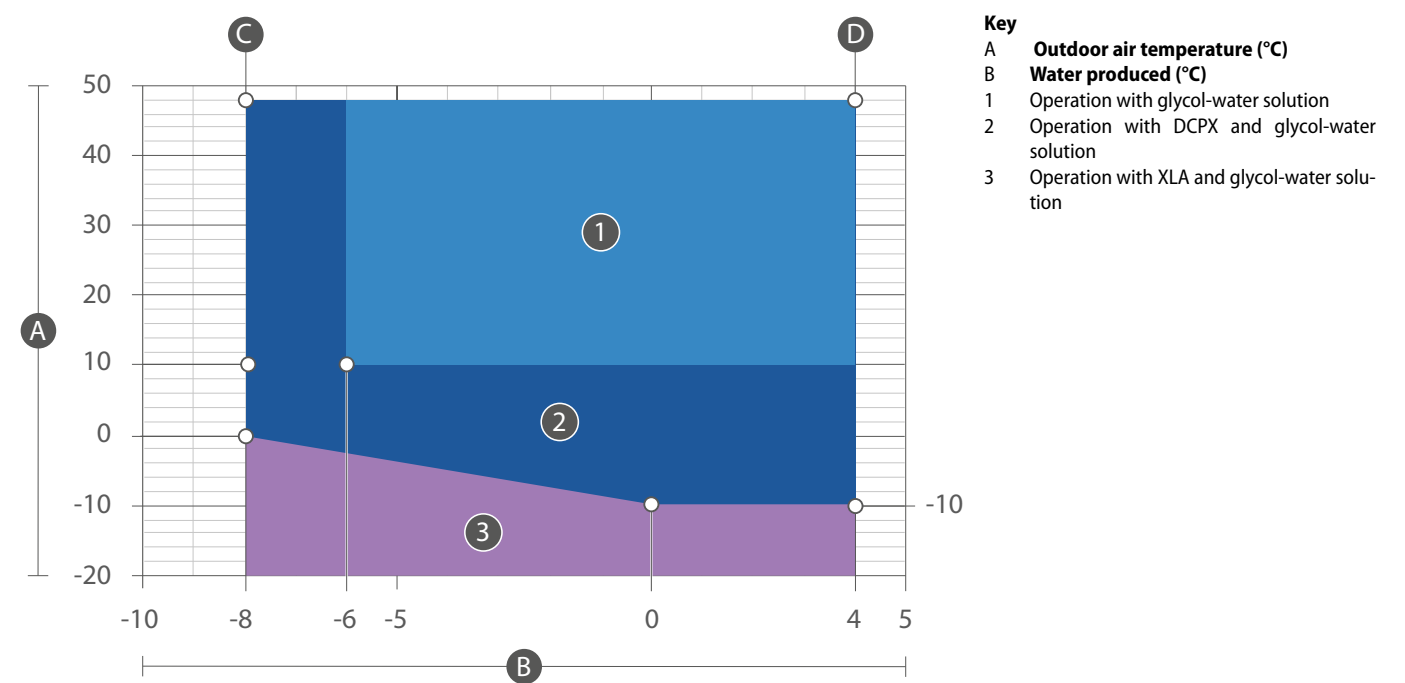


17 OPERATING LIMITS

In their standard configuration, the units are not suitable for installation in salty environments.
The values indicated in the table refer to the min. and max. limits of the unit.
If the unit operates beyond the operational limits, we recommend you first contact our technical-sales service.

■ Note: If the unit is installed in particularly windy areas, it is mandatory to have windbreak barriers to prevent unit malfunctions. It should be installed if wind speed is above 2,5 m/s.

OPERATION: VALVE Y/Z



Versions L - E - N: DCPX as standard
ATTENTION: The external temperature values marked in the graphs by a letter are specified in detail for each size and version in the following table.
■ The outside air temperature values with valve Z correspond to those with valve Y.

NSM °															
Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
OPERATING FIELD: Y															
External air temperature															
C	°C	48,0	46,0	44,0	46,0	46,0	44,0	44,0	42,0	42,0	38,0	38,0	42,0	40,0	42,0
D	°C	48,0	46,0	44,0	46,0	46,0	44,0	44,0	42,0	42,0	38,0	38,0	42,0	40,0	42,0
Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603	
OPERATING FIELD: Y															
External air temperature															
C	°C	42,0	42,0	42,0	44,0	44,0	42,0	44,0	42,0	42,0	42,0	42,0	40,0	38,0	
D	°C	42,0	42,0	42,0	44,0	44,0	42,0	44,0	42,0	42,0	42,0	42,0	40,0	38,0	
NSM L															
Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
OPERATING FIELD: Y															
External air temperature															
C	°C	50,0	50,0	48,0	46,0	48,0	48,0	46,0	48,0	48,0	40,0	40,0	46,0	46,0	46,0
D	°C	50,0	50,0	48,0	46,0	48,0	48,0	46,0	48,0	48,0	40,0	40,0	46,0	46,0	46,0
Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603	
OPERATING FIELD: Y															
External air temperature															
C	°C	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0
D	°C	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0
NSM A															
Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
OPERATING FIELD: Y															
External air temperature															
C	°C	50,0	50,0	48,0	46,0	48,0	48,0	46,0	48,0	48,0	40,0	40,0	46,0	46,0	46,0
D	°C	50,0	50,0	48,0	46,0	48,0	48,0	46,0	48,0	48,0	40,0	40,0	46,0	46,0	46,0

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
OPERATING FIELD: Y														
External air temperature														
C	°C	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0
D	°C	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0

NSM E

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
OPERATING FIELD: Y															
External air temperature															
C	°C	50,0	50,0	50,0	48,0	48,0	48,0	48,0	50,0	50,0	42,0	42,0	48,0	48,0	48,0
D	°C	50,0	50,0	50,0	48,0	48,0	48,0	48,0	50,0	50,0	42,0	42,0	48,0	48,0	48,0
Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603	
OPERATING FIELD: Y															
External air temperature															
C	°C	48,0	46,0	48,0	48,0	48,0	48,0	48,0	46,0	48,0	46,0	46,0	-	-	
D	°C	48,0	46,0	48,0	48,0	48,0	48,0	48,0	46,0	48,0	46,0	46,0	-	-	

NSM U

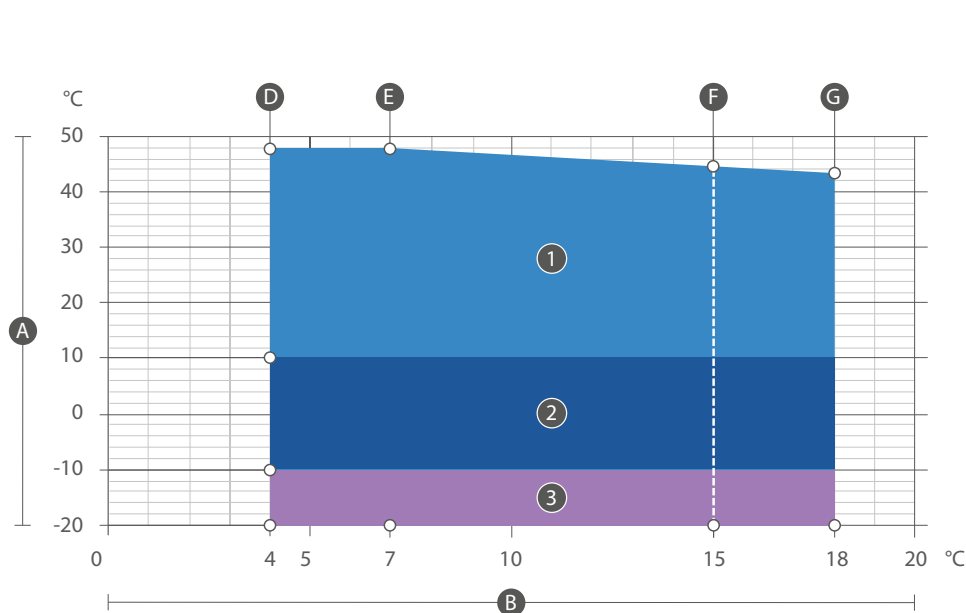
Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
OPERATING FIELD: Y															
External air temperature															
C	°C	46,0	50,0	50,0	48,0	48,0	48,0	48,0	50,0	50,0	42,0	42,0	48,0	48,0	48,0
D	°C	46,0	50,0	50,0	48,0	48,0	48,0	48,0	50,0	50,0	42,0	42,0	48,0	48,0	48,0
Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603	
OPERATING FIELD: Y															
External air temperature															
C	°C	48,0	46,0	48,0	48,0	48,0	48,0	48,0	46,0	48,0	46,0	46,0	-	-	
D	°C	48,0	46,0	48,0	48,0	48,0	48,0	48,0	46,0	48,0	46,0	46,0	-	-	

NSM N

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
OPERATING FIELD: Y															
External air temperature															
C	°C	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	48,0	48,0	50,0	50,0	50,0
D	°C	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	48,0	48,0	50,0	50,0	50,0

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
OPERATING FIELD: Y														
External air temperature														
C	°C	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	-	-	-	-	-
D	°C	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	-	-	-	-	-

OPERATION: VALVE °/X



Versions L - E - N: DCPX as standard

Maximum processed water temperature:

— with valve ° = 15 °C

— with valve X = 18 °C

ATTENTION: The external temperature values marked in the graphs by a letter are specified in detail for each size and version in the following table.

■ The outside air temperature values with valve X correspond to those with valve °.

NSM °

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
OPERATING FIELD: °															
External air temperature															
D	°C	48,0	46,0	44,0	46,0	46,0	44,0	44,0	42,0	42,0	38,0	38,0	42,0	40,0	42,0
E	°C	48,0	46,0	44,0	46,0	46,0	44,0	44,0	42,0	42,0	38,0	38,0	42,0	40,0	42,0
F	°C	43,0	41,0	39,0	41,0	41,0	39,0	39,0	37,0	37,0	33,0	33,0	37,0	35,0	37,0
G	°C	42,0	40,0	38,0	40,0	40,0	38,0	38,0	36,0	36,0	32,0	32,0	36,0	34,0	36,0

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
OPERATING FIELD: °														
External air temperature														
D	°C	42,0	42,0	42,0	44,0	44,0	42,0	44,0	42,0	42,0	42,0	42,0	40,0	38,0
E	°C	42,0	42,0	42,0	44,0	44,0	42,0	44,0	42,0	42,0	42,0	42,0	40,0	38,0
F	°C	37,0	37,0	37,0	-(1)	-(1)	-(1)	-(1)	37,0	37,0	37,0	37,0	-(1)	-(1)
G	°C	36,0	36,0	36,0	38,0	38,0	36,0	38,0	36,0	36,0	36,0	36,0	34,0	32,0

(1) Electronic thermostatic as standard

NSM L

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
OPERATING FIELD: °															
External air temperature															
D	°C	50,0	50,0	48,0	46,0	48,0	48,0	46,0	48,0	48,0	40,0	40,0	46,0	46,0	46,0
E	°C	50,0	50,0	48,0	46,0	48,0	48,0	46,0	48,0	48,0	40,0	40,0	46,0	46,0	46,0
F	°C	45,0	45,0	43,0	41,0	43,0	43,0	41,0	43,0	43,0	35,0	35,0	41,0	41,0	41,0
G	°C	44,0	44,0	42,0	40,0	42,0	42,0	40,0	42,0	42,0	34,0	34,0	40,0	40,0	40,0

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
OPERATING FIELD: °														
External air temperature														
D	°C	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0
E	°C	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0
F	°C	41,0	41,0	41,0	-(1)	-(1)	-(1)	-(1)	41,0	41,0	41,0	41,0	-(1)	-(1)
G	°C	40,0	40,0	40,0	40,0	40,0	40,0	40,0	40,0	40,0	40,0	40,0	40,0	40,0

(1) Electronic thermostatic as standard

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
OPERATING FIELD: °															
External air temperature															
D	°C	50,0	50,0	48,0	46,0	48,0	48,0	46,0	48,0	48,0	40,0	40,0	46,0	46,0	46,0
E	°C	50,0	50,0	48,0	46,0	48,0	48,0	46,0	48,0	48,0	40,0	40,0	46,0	46,0	46,0
F	°C	45,0	45,0	43,0	41,0	43,0	43,0	41,0	43,0	43,0	35,0	35,0	41,0	41,0	41,0
G	°C	44,0	44,0	42,0	40,0	42,0	42,0	40,0	42,0	42,0	34,0	34,0	40,0	40,0	40,0
Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603	
OPERATING FIELD: °															
External air temperature															
D	°C	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0
E	°C	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0
F	°C	41,0	41,0	41,0	- (1)	- (1)	- (1)	- (1)	41,0	41,0	41,0	41,0	41,0	- (1)	- (1)
G	°C	40,0	40,0	40,0	40,0	40,0	40,0	40,0	40,0	40,0	40,0	40,0	40,0	40,0	40,0

(1) Electronic thermostatic as standard

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
OPERATING FIELD: °															
External air temperature															
D	°C	50,0	50,0	50,0	48,0	48,0	48,0	48,0	50,0	50,0	42,0	42,0	48,0	48,0	48,0
E	°C	50,0	50,0	50,0	48,0	48,0	48,0	48,0	50,0	50,0	42,0	42,0	48,0	48,0	48,0
F	°C	45,0	45,0	45,0	43,0	43,0	43,0	43,0	45,0	45,0	37,0	37,0	43,0	43,0	43,0
G	°C	44,0	44,0	44,0	42,0	42,0	42,0	42,0	44,0	44,0	36,0	36,0	42,0	42,0	42,0
Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603	
OPERATING FIELD: °															
External air temperature															
D	°C	48,0	46,0	48,0	48,0	48,0	48,0	48,0	46,0	48,0	46,0	46,0	-	-	-
E	°C	48,0	46,0	48,0	48,0	48,0	48,0	48,0	46,0	48,0	46,0	46,0	-	-	-
F	°C	43,0	41,0	43,0	- (1)	- (1)	- (1)	- (1)	41,0	43,0	41,0	41,0	-	-	-
G	°C	42,0	40,0	42,0	42,0	42,0	42,0	42,0	40,0	42,0	40,0	40,0	-	-	-

(1) Electronic thermostatic as standard

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
OPERATING FIELD: °															
External air temperature															
D	°C	46,0	50,0	50,0	48,0	48,0	48,0	48,0	50,0	50,0	42,0	42,0	48,0	48,0	48,0
E	°C	46,0	50,0	50,0	48,0	48,0	48,0	48,0	50,0	50,0	42,0	42,0	48,0	48,0	48,0
F	°C	43,0	45,0	45,0	43,0	43,0	43,0	43,0	45,0	45,0	37,0	37,0	43,0	43,0	43,0
G	°C	42,0	44,0	44,0	42,0	42,0	42,0	42,0	44,0	44,0	36,0	36,0	42,0	42,0	42,0
Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603	
OPERATING FIELD: °															
External air temperature															
D	°C	48,0	46,0	48,0	48,0	48,0	48,0	48,0	46,0	48,0	46,0	46,0	-	-	-
E	°C	48,0	46,0	48,0	48,0	48,0	48,0	48,0	46,0	48,0	46,0	46,0	-	-	-
F	°C	43,0	41,0	43,0	- (1)	- (1)	- (1)	- (1)	41,0	43,0	41,0	41,0	-	-	-
G	°C	42,0	40,0	42,0	42,0	42,0	42,0	42,0	40,0	42,0	40,0	40,0	-	-	-

(1) Electronic thermostatic as standard

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
OPERATING FIELD: °															
External air temperature															
D	°C	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	48,0	48,0	50,0	50,0	50,0
E	°C	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	48,0	48,0	50,0	50,0	50,0
F	°C	47,0	45,0	45,0	45,0	45,0	45,0	45,0	45,0	45,0	43,0	43,0	45,0	45,0	45,0
G	°C	46,0	44,0	44,0	44,0	44,0	44,0	44,0	44,0	44,0	42,0	42,0	44,0	44,0	44,0
Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603	
OPERATING FIELD: °															
External air temperature															
D	°C	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	-	-	-	-	-	-
E	°C	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	-	-	-	-	-	-
F	°C	45,0	45,0	45,0	- (1)	- (1)	- (1)	- (1)	45,0	-	-	-	-	-	-
G	°C	44,0	44,0	44,0	44,0	44,0	44,0	44,0	44,0	-	-	-	-	-	-

(1) Electronic thermostatic as standard

XLA ACCESSORY COMPATIBILITY

Version		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Min. outside air temperature with kit XLA*	°	°C	-	-	-	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
	L	°C	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
	A	°C	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
	E	°C	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
	U	°C	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
	N	°C	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
Version		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603	
Min. outside air temperature with kit XLA*	°	°C	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
	L	°C	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
	A	°C	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
	E	°C	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-	-
	U	°C	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-	-
	N	°C	-20	-20	-20	-20	-20	-20	-20	-20	-	-	-	-	-

18 PRESSURE DROPS

SERVICE SIDE: WITHOUT HYDRONIC KIT (00) / WITH PUMPS (PA÷PJ - DA÷DJ - TF÷TJ)

The water flow rate is calculated with the following formula: $Q = Pc \times 860 / \Delta T$
Q Water flow rate (l/h)
Pc Cooling capacity (kW)
ΔT Water heat drop (°C)

Pressure drops are calculated with the following formula: $\Delta p = K \times (Q)^2$
Δp Pressure drops (kPa)
Coefficient for the various sizes and versions
Q Water flow rate (l/h)

Size		1402	1602	1802	2002	2202	2352	2502
Pressure drops coefficient								
Pressure drops coefficient without hydronic kit	°	9,7827E-09	9,9844E-09	8,2563E-09	8,1900E-09	8,0276E-09	3,1896E-09	3,1749E-09
	A	1,0048E-08	1,0214E-08	8,4003E-09	3,3406E-09	3,4142E-09	3,1981E-09	3,2613E-09
	E	5,1055E-09	3,5511E-09	3,4875E-09	3,1162E-09	3,0387E-09	3,0216E-09	2,9739E-09
	L	1,0048E-08	1,0214E-08	8,4003E-09	3,3406E-09	3,4142E-09	3,1981E-09	3,2614E-09
	N	5,0961E-09	3,5785E-09	3,4271E-09	3,1381E-09	3,0878E-09	3,0827E-09	3,0014E-09
	U	5,1055E-09	3,5512E-09	3,4876E-09	3,1163E-09	3,0387E-09	3,0216E-09	2,9739E-09
Pressure drops coefficient of hydronic kit with pumps	°	1,1955E-08	1,2157E-08	9,1848E-09	9,1185E-09	8,9560E-09	4,1179E-09	4,1032E-09
	A	1,2221E-08	1,2386E-08	9,3287E-09	4,2689E-09	4,3426E-09	4,1264E-09	4,1897E-09
	E	7,2782E-09	5,7239E-09	4,4159E-09	4,0446E-09	3,9669E-09	3,9499E-09	3,9023E-09
	L	1,2221E-08	1,2386E-08	9,3288E-09	4,2689E-09	4,3426E-09	4,1264E-09	4,1896E-09
	N	7,2687E-09	5,7512E-09	4,3553E-09	4,0663E-09	4,0162E-09	4,0111E-09	3,9298E-09
	U	7,2784E-09	5,7239E-09	4,4158E-09	4,0445E-09	3,9671E-09	3,9500E-09	3,9023E-09
System side heat exchanger								
Minimum water flow rate	°	l/h	26470	30035	34175	38775	42140	46805
	A	l/h	27170	31010	35750	39710	43850	46895
	E	l/h	27510	31720	35940	40660	44250	46750
	L	l/h	26035	29615	33805	36840	42250	44220
	N	l/h	28390	32310	37170	40830	44490	47415
	U	l/h	28500	32550	37190	41455	45410	48600
Maximum water flow rate	°	l/h	75629	85814	97643	110786	120400	129029
	A	l/h	77629	88600	102143	113457	125286	133986
	E	l/h	78600	90629	102686	116171	126429	133571
	L	l/h	74386	84614	96586	105257	120714	126343
	N	l/h	81114	92314	106200	116657	127114	135471
	U	l/h	81429	93000	106257	118443	129743	138857
Size		2652	2802	3002	3202	3402	3602	3902
Pressure drops coefficient								
Pressure drops coefficient without hydronic kit	°	3,3341E-09	3,1802E-09	2,8157E-09	2,6915E-09	2,6960E-09	1,9648E-09	1,8838E-09
	A	3,2649E-09	2,8547E-09	2,7513E-09	1,5671E-09	1,3022E-09	1,2404E-09	1,3266E-09
	E,U	2,1332E-09	2,0728E-09	2,0299E-09	1,5893E-09	1,3223E-09	1,2568E-09	1,3263E-09
	L	3,2650E-09	2,8547E-09	2,7512E-09	1,5671E-09	1,3022E-09	1,2404E-09	1,3266E-09
	N	2,1601E-09	2,0974E-09	2,0070E-09	1,5775E-09	1,3096E-09	1,3116E-09	1,3606E-09
	U	4,2624E-09	4,1086E-09	3,7440E-09	3,6198E-09	3,6244E-09	2,8931E-09	2,8121E-09
Pressure drops coefficient of hydronic kit with pumps	A	4,1932E-09	3,7831E-09	3,6796E-09	2,4955E-09	1,7283E-09	1,6664E-09	1,7526E-09
	E	3,0615E-09	3,0011E-09	2,9583E-09	2,5177E-09	1,7483E-09	1,6828E-09	1,7523E-09
	L	4,1932E-09	3,7831E-09	3,6796E-09	2,4955E-09	1,7282E-09	1,6664E-09	1,7527E-09
	N	3,0884E-09	3,0256E-09	2,9352E-09	2,5059E-09	1,7357E-09	1,7376E-09	1,7866E-09
	U	3,0614E-09	3,0010E-09	2,9582E-09	2,5177E-09	1,7483E-09	1,6828E-09	1,7523E-09
System side heat exchanger								
Minimum water flow rate	°	l/h	49685	52830	58570	62410	66280	70035
	A	l/h	53440	56710	60195	63830	68895	76090
	E	l/h	52940	56120	59845	63730	68540	75865
	L	l/h	50210	51885	57185	61020	66345	71090
	N	l/h	53390	56725	60340	63960	69105	75695
	U	l/h	54640	58110	60950	64610	69805	77660
Maximum water flow rate	°	l/h	141957	150943	167343	178314	189371	200100
	A	l/h	152686	162029	171986	182371	196843	217400
	E	l/h	151257	160343	170986	182086	195829	216757
	L	l/h	143457	148243	163386	174343	189557	203114
	N	l/h	152543	162071	172400	182743	197443	216271
	U	l/h	156114	166029	174143	184600	199443	221886

Size		4202	4502	4802	5202	5602	6002	6402
Pressure drops coefficient								
Pressure drops coefficient without hydronic kit	°	1,5192E-09	1,4705E-09	1,1661E-09	1,1409E-09	1,1336E-09	1,2172E-09	1,1862E-09
	A	1,2677E-09	1,4072E-09	1,3401E-09	8,8069E-10	8,7198E-10	9,0783E-10	9,0030E-10
	E	1,3089E-09	1,4081E-09	9,1735E-10	8,8723E-10	5,1139E-10	4,6831E-10	5,1446E-10
	L	1,2677E-09	1,4072E-09	1,3401E-09	8,8068E-10	8,7198E-10	9,0783E-10	9,0030E-10
	N	1,3184E-09	1,0095E-09	1,0936E-09	1,0079E-09	5,4686E-10	5,0610E-10	5,3576E-10
	U	1,3090E-09	1,4081E-09	9,1735E-10	8,8723E-10	5,1139E-10	4,6831E-10	5,1446E-10
Pressure drops coefficient of hydronic kit with pumps	°	2,4476E-09	2,3988E-09	1,5921E-09	1,5669E-09	1,5596E-09	1,6432E-09	1,6122E-09
	A	1,6937E-09	1,8332E-09	1,7661E-09	1,3067E-09	1,2980E-09	1,3339E-09	1,3263E-09
	E	1,7350E-09	1,8342E-09	1,3434E-09	1,3132E-09	7,2347E-10	7,0550E-10	7,2773E-10
	L	1,6938E-09	1,8332E-09	1,7661E-09	1,3067E-09	1,2980E-09	1,3339E-09	1,3263E-09
	N	1,7444E-09	1,2689E-09	1,3257E-09	1,2190E-09	7,7894E-10	7,5374E-10	7,6784E-10
	U	1,7350E-09	1,8342E-09	1,3434E-09	1,3133E-09	7,4348E-10	7,2156E-10	7,4654E-10
System side heat exchanger								
Minimum water flow rate	°	I/h	82490	90465	94580	100520	102840	106515
	A	I/h	87925	93330	99840	104395	109785	116370
	E	I/h	87685	93130	99745	103840	108860	113745
	L	I/h	81725	88855	92675	96610	101860	107955
	N	I/h	87295	93460	100655	104905	109020	113320
	U	I/h	89790	95070	101940	106190	111960	117085
Maximum water flow rate	°	I/h	235686	258471	270229	287200	293829	304329
	A	I/h	251214	266657	285257	298271	313671	332486
	E	I/h	250529	266086	284986	296686	311029	324986
	L	I/h	233500	253871	264786	276029	291029	308443
	N	I/h	249414	267029	287586	299729	311486	323771
	U	I/h	256543	271629	291257	303400	319886	334529
Pressure drops coefficient								
Size		6503	6703	6903	7203	8403	9603	
Pressure drops coefficient								
Pressure drops coefficient without hydronic kit	°	7,5848E-10	7,5047E-10	4,0779E-10	4,0090E-10	3,9634E-10	3,8955E-10	
	A	5,6657E-10	5,6382E-10	5,8511E-10	5,8727E-10	3,7639E-10	3,9868E-10	
	E,U	5,5723E-10	5,7272E-10	5,9941E-10	4,9360E-10	-	-	
	L	5,6657E-10	5,6382E-10	5,8511E-10	5,8728E-10	3,7639E-10	3,9868E-10	
	N	5,8875E-10	-	-	-	-	-	
	U	9,0407E-10	8,9607E-10	5,5339E-10	5,4649E-10	5,4193E-10	5,3515E-10	
Pressure drops coefficient of hydronic kit with pumps	°	7,4852E-10	7,5134E-10	7,6660E-10	7,7417E-10	5,6492E-10	5,8876E-10	
	A	7,1320E-10	7,4792E-10	7,4345E-10	5,7602E-10	-	-	
	E	7,5401E-10	7,7353E-10	7,7233E-10	7,9137E-10	5,9278E-10	6,2668E-10	
	L	7,5401E-10	7,7353E-10	7,7233E-10	7,9137E-10	5,9278E-10	6,2668E-10	
	N	7,3676E-10	-	-	-	-	-	
	U	7,3691E-10	7,6015E-10	7,8321E-10	6,0371E-10	-	-	
System side heat exchanger								
Minimum water flow rate	°	I/h	119935	123895	135825	143665	149895	160025
	A	I/h	125810	131810	144805	150870	164215	181230
	E	I/h	126045	131485	143710	150795	-	-
	L	I/h	120045	123615	138110	141925	151260	167495
	N	I/h	124990	-	-	-	-	-
	U	I/h	129550	135890	145705	152525	-	-
Maximum water flow rate	°	I/h	342671	353986	388071	410471	428271	457214
	A	I/h	359457	376600	413729	431057	469186	517800
	E	I/h	360129	375671	410600	430843	-	-
	L	I/h	342986	353186	394600	405500	432171	478557
	N	I/h	357114	-	-	-	-	-
	U	I/h	370143	388257	416300	435786	-	-

DESUPERHEATER

The water flow rate is calculated with the following formula: $Q = Pc \times 860 / \Delta T$

Q Water flow rate (l/h)
Pc Cooling capacity (kW)
 ΔT Water heat drop (°C)

Pressure drops are calculated with the following formula: $\Delta p = K \times (Q)^2$

Δp Pressure drops (kPa)
Coefficient for the various sizes and versions
Q Water flow rate (l/h)

Size			1402	1602	1802	2002	2202	2352	2502
Pressure drops coefficient									
Pressure drops coefficient of desuperheater	°		5,8456E-08	4,7657E-08	3,9311E-08	3,5851E-08	2,6357E-08	2,2640E-08	1,8799E-08
	A		6,0069E-08	4,9141E-08	4,0685E-08	3,5785E-08	2,6830E-08	2,2987E-08	1,9259E-08
	E		5,8182E-08	4,7375E-08	4,0311E-08	3,5877E-08	2,5840E-08	2,2831E-08	1,9025E-08
	L		5,8688E-08	4,7896E-08	3,9539E-08	3,4431E-08	2,6067E-08	2,2700E-08	1,8648E-08
	N		5,9400E-08	4,8516E-08	4,1042E-08	3,5839E-08	2,6439E-08	2,2993E-08	1,9376E-08
	U		5,9595E-08	4,8650E-08	4,1320E-08	3,5980E-08	2,6628E-08	2,3158E-08	1,9572E-08
Desuperheater									
Minimum water flow rate	°	l/h	6622	8357	10756	10264	11934	13980	15342
	A	l/h	5522	6814	8557	10777	10598	11647	13051
	E	l/h	6832	8696	9098	11556	13616	12929	14163
	L	l/h	6450	8083	10354	13006	12845	14301	16185
	N	l/h	5952	7418	8069	10041	11691	11508	12536
	U	l/h	5827	7287	7717	9586	11143	10782	11727
Maximum water flow rate	°	l/h	22073	27857	35852	34213	39778	46598	51138
	A	l/h	18407	22713	28522	35923	35325	38823	43502
	E	l/h	22773	28987	30327	38518	45387	43097	47210
	L	l/h	21500	26943	34512	43353	42817	47668	53950
	N	l/h	19838	24725	26895	33470	38968	38360	41787
	U	l/h	19423	24288	25723	31953	37143	35938	39090
Size			2652	2802	3002	3202	3402	3602	3902
Pressure drops coefficient									
Pressure drops coefficient of desuperheater	°		1,7767E-08	1,4347E-08	1,3911E-08	1,1723E-08	9,7154E-09	7,6300E-09	7,3331E-09
	A		1,8146E-08	1,4875E-08	1,3864E-08	1,1847E-08	1,0493E-08	7,7871E-09	7,4536E-09
	E		1,8016E-08	1,4696E-08	1,3937E-08	1,1681E-08	1,0284E-08	7,6742E-09	7,4156E-09
	L		1,7915E-08	1,4418E-08	1,4002E-08	1,1523E-08	9,9245E-09	7,6336E-09	7,2291E-09
	N		1,8113E-08	1,4924E-08	1,3850E-08	1,1914E-08	1,0337E-08	7,8880E-09	7,4633E-09
	U		1,8273E-08	1,5105E-08	1,3786E-08	1,2098E-08	1,0715E-08	7,9075E-09	7,4810E-09
Desuperheater									
Minimum water flow rate	°	l/h	16526	18390	17156	18689	21430	24314	24683
	A	l/h	12717	14452	15703	17420	18288	21229	22155
	E	l/h	14147	15664	17226	19155	20207	23398	24606
	L	l/h	15452	17796	18728	20959	21255	24241	25473
	N	l/h	12831	14136	15312	16772	18250	19482	20960
	U	l/h	11863	13044	13968	15145	16463	19164	20260
Maximum water flow rate	°	l/h	55085	61300	57187	62297	71433	81047	82275
	A	l/h	42390	48172	52342	58065	60960	70762	73850
	E	l/h	47157	52212	57418	63848	67355	77993	82020
	L	l/h	51505	59320	62427	69862	70850	80802	84908
	N	l/h	42770	47118	51038	55905	60832	64940	69865
	U	l/h	39542	43480	46558	50483	54877	63878	67533

Size		4202	4502	4802	5202	5602	6002	6402
Pressure drops coefficient								
Pressure drops coefficient of desuperheater	°	5,7878E-09	5,5450E-09	4,5243E-09	5,3096E-09	4,4775E-09	4,8999E-09	4,4430E-09
	A	5,8930E-09	5,6091E-09	4,5959E-09	5,3609E-09	4,5749E-09	5,1100E-09	4,5219E-09
	E	5,8759E-09	5,5030E-09	4,5586E-09	4,6334E-09	4,4814E-09	4,5036E-09	4,4775E-09
	L	5,7754E-09	5,3803E-09	4,5061E-09	5,1243E-09	4,4718E-09	5,0529E-09	4,4259E-09
	N	5,9455E-09	5,4744E-09	4,7022E-09	5,1195E-09	4,6302E-09	5,1194E-09	4,5460E-09
	U	6,0468E-09	5,6421E-09	4,6961E-09	4,8211E-09	4,6112E-09	4,6763E-09	4,6017E-09
Desuperheater								
Minimum water flow rate	°	I/h	28096	28090	31453	31040	33714	36358
	A	I/h	24917	25640	28326	29472	29251	29702
	E	I/h	25408	28721	29908	31275	33516	33616
	L	I/h	28499	29567	32308	33625	33999	34085
	N	I/h	23486	23283	24320	25637	26953	28710
	U	I/h	20986	23623	24531	26951	27707	27868
Maximum water flow rate	°	I/h	93652	93632	104842	103465	112380	121192
	A	I/h	83055	85467	94418	98240	97502	99005
	E	I/h	84692	95735	99693	104250	111720	112053
	L	I/h	94995	98557	107693	112083	113330	113617
	N	I/h	78287	77608	81067	85457	89842	95700
	U	I/h	69953	78742	81770	89837	92357	92893
Size		6503	6703	6903	7203	8403	9603	
Pressure drops coefficient								
Pressure drops coefficient of desuperheater	°	2,9860E-09	2,5727E-09	2,2361E-09	2,1524E-09	2,0595E-09	2,0100E-09	
	A	3,1000E-09	2,6608E-09	2,4690E-09	2,1595E-09	2,0249E-09	2,0193E-09	
	E	3,1966E-09	2,6520E-09	2,2849E-09	2,1687E-09	-	-	
	L	2,9981E-09	2,5896E-09	2,3457E-09	2,0829E-09	1,9777E-09	1,9774E-09	
	N	3,1846E-09	-	-	-	-	-	
	U	3,2213E-09	2,7268E-09	2,3480E-09	2,2355E-09	-	-	
Desuperheater								
Minimum water flow rate	°	I/h	39079	42103	45701	45644	53283	59451
	A	I/h	34696	37452	38551	41221	47330	47360
	E	I/h	37478	38280	44582	45745	-	-
	L	I/h	39828	42856	44779	47520	54183	54698
	N	I/h	32087	-	-	-	-	-
	U	I/h	30820	31535	36545	37442	-	-
Maximum water flow rate	°	I/h	130262	140342	152337	152145	177608	198168
	A	I/h	115653	124838	128503	137403	157767	157865
	E	I/h	124925	127598	148607	152482	-	-
	L	I/h	132760	142852	149263	158398	180608	182327
	N	I/h	106955	-	-	-	-	-
	U	I/h	102732	105117	121817	124805	-	-

TOTAL RECOVERY

The water flow rate is calculated with the following formula: $Q = Pc \times 860 / \Delta T$

Q Water flow rate (l/h)
Pc Cooling capacity (kW)
 ΔT Water heat drop (°C)

Pressure drops are calculated with the following formula: $\Delta p = K \times (Q)^2$

Δp Pressure drops (kPa)
Coefficient for the various sizes and versions
Q Water flow rate (l/h)

Size		1402	1602	1802	2002	2202	2352	2502
Pressure drops coefficient								
Total recovery unit pressure drop coefficient	°	8,7723E-09	8,7731E-09	5,8865E-09	6,0880E-09	4,2830E-09	4,7327E-09	3,5260E-09
	A,L	8,7729E-09	8,7722E-09	5,8868E-09	6,0874E-09	4,2829E-09	4,7325E-09	3,5259E-09
	E,N,U	8,7732E-09	8,7716E-09	5,8866E-09	6,0882E-09	4,2822E-09	4,7327E-09	3,5261E-09
Total recovery								
Minimum water flow rate	°	I/h	32512	37634	42865	48067	53269	59082
	A,L	I/h	33678	38939	44345	49712	55078	61083
	E,N,U	I/h	34026	39340	44780	50199	55618	61622
Maximum water flow rate	°	I/h	108373	125445	142883	160223	177562	196938
	A,L	I/h	112260	129797	147815	165705	183593	203610
	E,N,U	I/h	113420	131132	149265	167328	185392	205407
Size		2652	2802	3002	3202	3402	3602	3902
Pressure drops coefficient								
Total recovery unit pressure drop coefficient	°	4,0044E-09	3,5261E-09	2,5053E-09	2,1933E-09	1,7404E-09	1,2399E-09	1,2153E-09
	A,L	4,0041E-09	3,5261E-09	2,5054E-09	2,1931E-09	1,7403E-09	1,2399E-09	1,2153E-09
	E,N,U	4,0043E-09	3,5263E-09	2,5052E-09	2,1933E-09	1,7405E-09	1,2398E-09	1,2153E-09
Total recovery								
Minimum water flow rate	°	I/h	63141	67200	73384	79567	85758	91949
	A,L	I/h	65316	69549	74923	80298	87750	95203
	E,N,U	I/h	65951	70280	75472	80663	88394	96125
Maximum water flow rate	°	I/h	210470	224000	244612	265222	285858	306495
	A,L	I/h	217720	231830	249743	267658	292500	317342
	E,N,U	I/h	219837	234267	251572	268877	294647	320417
Size		4202	4502	4802	5202	5602	6002	6402
Pressure drops coefficient								
Total recovery unit pressure drop coefficient	°	1,0706E-09	9,9569E-10	8,8155E-10	9,6073E-10	8,8153E-10	9,5844E-10	8,8154E-10
	A,L	1,0707E-09	9,9572E-10	8,8154E-10	9,6067E-10	8,8152E-10	9,5842E-10	8,8151E-10
	E,N,U	1,0706E-09	9,9576E-10	8,8150E-10	9,6071E-10	8,8149E-10	9,5844E-10	8,8152E-10
Total recovery								
Minimum water flow rate	°	I/h	104886	112056	119226	124633	130040	135824
	A,L	I/h	108505	115849	123193	128809	134426	140393
	E,N,U	I/h	109584	116928	124272	129984	135696	141750
Maximum water flow rate	°	I/h	349620	373520	397420	415442	433465	452747
	A,L	I/h	361683	386163	410642	429363	448085	467975
	E,N,U	I/h	365278	389758	414238	433278	452318	472500
Size		6503	6703	6903	7203	8403	9603	
Pressure drops coefficient								
Total recovery unit pressure drop coefficient	°	5,4719E-10	4,7584E-10	5,1568E-10	3,9179E-10	3,9178E-10	3,9178E-10	
	A,L	5,4718E-10	4,7585E-10	5,1568E-10	3,9180E-10	3,9180E-10	3,9179E-10	
	E,U	5,4719E-10	4,7584E-10	5,1567E-10	3,9179E-10	-	-	
	N	5,4719E-10	-	-	-	-	-	
Total recovery								
Minimum water flow rate	°	I/h	150860	157329	171669	178839	195059	212413
	A,L	I/h	156106	162758	177445	184789	201638	219540
	E,U	I/h	157646	164376	179063	186407	-	-
	N	I/h	157646	-	-	-	-	-
Maximum water flow rate	°	I/h	502867	524428	572230	596130	650197	708043
	A,L	I/h	520353	542525	591483	615963	672127	731800
	E,U	I/h	525487	547918	596877	621357	-	-
	N	I/h	525487	-	-	-	-	-

19 PUMPS STATIC PRESSURE

Size			1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
INTEGRATED HYDRONIC KIT: 00																
Pumps																
Nr. poles	°A,E,L,N,U	no.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum input power	°A,E,L,N,U	kW	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum current	°A,E,L,N,U	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum water flow rate	°A,E,L,N,U	l/h	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum water flow rate	°A,E,L,N,U	l/h	-	-	-	-	-	-	-	-	-	-	-	-	-	-
INTEGRATED HYDRONIC KIT: DA																
Pumps																
Nr. poles	°A,E,L,N,U	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Maximum input power	°A,E,L,N,U	kW	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54
Maximum current	°A,E,L,N,U	A	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46
Minimum water flow rate	°A,E,L,N,U	l/h	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000
Maximum water flow rate	°A,E,L,N,U	l/h	41000	41000	41000	41000	41000	41000	41000	41000	41000	41000	41000	41000	41000	41000
INTEGRATED HYDRONIC KIT: DB																
Pumps																
Nr. poles	°A,E,L,N,U	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Maximum input power	°A,E,L,N,U	kW	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12
Maximum current	°A,E,L,N,U	A	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33
Minimum water flow rate	°A,E,L,N,U	l/h	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060
Maximum water flow rate	°A,E,L,N,U	l/h	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000
INTEGRATED HYDRONIC KIT: DC																
Pumps																
Nr. poles	°A,E,L,N,U	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Maximum input power	°A,E,L,N,U	kW	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12
Maximum current	°A,E,L,N,U	A	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62
Minimum water flow rate	°A,E,L,N,U	l/h	20430	20430	20430	20430	20430	20430	20430	20430	20430	20430	20430	20430	20430	20430
Maximum water flow rate	°A,E,L,N,U	l/h	71000	71000	71000	71000	71000	71000	71000	71000	71000	71000	71000	71000	71000	71000
INTEGRATED HYDRONIC KIT: DD																
Pumps																
Nr. poles	°A,E,L,N,U	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Maximum input power	°A,E,L,N,U	kW	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88
Maximum current	°A,E,L,N,U	A	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50
Minimum water flow rate	°A,E,L,N,U	l/h	23670	23670	23670	23670	23670	23670	23670	23670	23670	23670	23670	23670	23670	23670
Maximum water flow rate	°A,E,L,N,U	l/h	85500	85500	85500	85500	85500	85500	85500	85500	85500	85500	85500	85500	85500	85500
INTEGRATED HYDRONIC KIT: DE																
Pumps																
Nr. poles	°A,E,L,N,U	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Maximum input power	°A,E,L,N,U	kW	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14
Maximum current	°A,E,L,N,U	A	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10
Minimum water flow rate	°A,E,L,N,U	l/h	22020	22020	22020	22020	22020	22020	22020	22020	22020	22020	22020	22020	22020	22020
Maximum water flow rate	°A,E,L,N,U	l/h	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000
INTEGRATED HYDRONIC KIT: DF																
Pumps																
Nr. poles	°A,E,L,N,U	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Maximum input power	°A,E,L,N,U	kW	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08
Maximum current	°A,E,L,N,U	A	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20
Minimum water flow rate	°A,E,L,N,U	l/h	27660	27660	27660	27660	27660	27660	27660	27660	27660	27660	27660	27660	27660	27660
Maximum water flow rate	°A,E,L,N,U	l/h	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000
INTEGRATED HYDRONIC KIT: DG																
Pumps																
Nr. poles	°A,E,L,N,U	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Maximum input power	°A,E,L,N,U	kW	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73
Maximum current	°A,E,L,N,U	A	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20
Minimum water flow rate	°A,E,L,N,U	l/h	34710	34710	34710	34710	34710	34710	34710	34710	34710	34710	34710	34710	34710	34710
Maximum water flow rate	°A,E,L,N,U	l/h	156990	156990	156990	156990	156990	156990	156990	156990	156990	156990	156990	156990	156990	156990
INTEGRATED HYDRONIC KIT: DH																
Pumps																
Nr. poles	°A,E,L,N,U	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Maximum input power	°A,E,L,N,U	kW	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04
Maximum current	°A,E,L,N,U	A	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60
Minimum water flow rate	°A,E,L,N,U	l/h	42150	42150	42150	42150	42150	42150	42150	42150	42150	42150	42150	42150	42150	42150
Maximum water flow rate	°A,E,L,N,U	l/h	185000	185000	185000	185000	185000	185000	185000	185000	185000	185000	185000	185000	185000	185000
INTEGRATED HYDRONIC KIT: DI																
Pumps																
Nr. poles	°A,E,L,N,U	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Maximum input power	°A,E,L,N,U	kW	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73
Maximum current	°A,E,L,N,U	A	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00
Minimum water flow rate	°A,E,L,N,U	l/h	46230	46230	46230	46230	46230	46230	46230	46230	46230	46230	46230	46230	46230	46230
Maximum water flow rate	°A,E,L,N,U	l/h	203420	203420	203420	203420	203420	203420	203420	203420	203420	203420	203420	203420	203420	203420

Size			1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
INTEGRATED HYDRONIC KIT: TF																
Pumps																
Nr. poles	°A,E,L,N,U	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Maximum input power	°A,E,L,N,U	kW	20,15	20,15	20,15	20,15	20,15	20,15	20,15	20,15	20,15	20,15	20,15	20,15	20,15	20,15
Maximum current	°A,E,L,N,U	A	34,40	34,40	34,40	34,40	34,40	34,40	34,40	34,40	34,40	34,40	34,40	34,40	34,40	34,40
Minimum water flow rate	°A,E,L,N,U	l/h	55320	55320	55320	55320	55320	55320	55320	55320	55320	55320	55320	55320	55320	55320
Maximum water flow rate	°A,E,L,N,U	l/h	240000	240000	240000	240000	240000	240000	240000	240000	240000	240000	240000	240000	240000	240000
INTEGRATED HYDRONIC KIT: TG																
Pumps																
Nr. poles	°A,E,L,N,U	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Maximum input power	°A,E,L,N,U	kW	21,46	21,46	21,46	21,46	21,46	21,46	21,46	21,46	21,46	21,46	21,46	21,46	21,46	21,46
Maximum current	°A,E,L,N,U	A	40,40	40,40	40,40	40,40	40,40	40,40	40,40	40,40	40,40	40,40	40,40	40,40	40,40	40,40
Minimum water flow rate	°A,E,L,N,U	l/h	69420	69420	69420	69420	69420	69420	69420	69420	69420	69420	69420	69420	69420	69420
Maximum water flow rate	°A,E,L,N,U	l/h	313980	313980	313980	313980	313980	313980	313980	313980	313980	313980	313980	313980	313980	313980
INTEGRATED HYDRONIC KIT: TH																
Pumps																
Nr. poles	°A,E,L,N,U	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Maximum input power	°A,E,L,N,U	kW	32,08	32,08	32,08	32,08	32,08	32,08	32,08	32,08	32,08	32,08	32,08	32,08	32,08	32,08
Maximum current	°A,E,L,N,U	A	53,20	53,20	53,20	53,20	53,20	53,20	53,20	53,20	53,20	53,20	53,20	53,20	53,20	53,20
Minimum water flow rate	°A,E,L,N,U	l/h	84300	84300	84300	84300	84300	84300	84300	84300	84300	84300	84300	84300	84300	84300
Maximum water flow rate	°A,E,L,N,U	l/h	370000	370000	370000	370000	370000	370000	370000	370000	370000	370000	370000	370000	370000	370000
INTEGRATED HYDRONIC KIT: TI																
Pumps																
Nr. poles	°A,E,L,N,U	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Maximum input power	°A,E,L,N,U	kW	39,46	39,46	39,46	39,46	39,46	39,46	39,46	39,46	39,46	39,46	39,46	39,46	39,46	39,46
Maximum current	°A,E,L,N,U	A	66,00	66,00	66,00	66,00	66,00	66,00	66,00	66,00	66,00	66,00	66,00	66,00	66,00	66,00
Minimum water flow rate	°A,E,L,N,U	l/h	92460	92460	92460	92460	92460	92460	92460	92460	92460	92460	92460	92460	92460	92460
Maximum water flow rate	°A,E,L,N,U	l/h	406840	406840	406840	406840	406840	406840	406840	406840	406840	406840	406840	406840	406840	406840
(1) contact the factory																
Size			4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603	
INTEGRATED HYDRONIC KIT: 00																
Pumps																
Nr. poles	°A,E,L,N,U	no.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum input power	°A,E,L,N,U	kW	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum current	°A,E,L,N,U	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum water flow rate	°A,E,L,N,U	l/h	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum water flow rate	°A,E,L,N,U	l/h	-	-	-	-	-	-	-	-	-	-	-	-	-	-
INTEGRATED HYDRONIC KIT: DA																
Pumps																
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54
	E,U	kW	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	-	-
	N	kW	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	2,54	-	-	-	-	-
Maximum current	°A,L	A	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46
	E,U	A	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46	-	-
	N	A	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46	5,46	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000
	E,U	l/h	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	-	-
	N	l/h	11000	11000	11000	11000	11000	11000	11000	11000	11000	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	41000	41000	41000	41000	41000	41000	41000	41000	41000	41000	41000	41000	41000	41000
	E,U	l/h	41000	41000	41000	41000	41000	41000	41000	41000	41000	41000	41000	41000	-	-
	N	l/h	41000	41000	41000	41000	41000	41000	41000	41000	41000	-	-	-	-	-
INTEGRATED HYDRONIC KIT: DB																
Pumps																
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12
	E,U	kW	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	-	-
	N	kW	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	3,12	-	-	-	-	-
Maximum current	°A,L	A	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33
	E,U	A	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	-	-
	N	A	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060
	E,U	l/h	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060	18060	-	-
	N	l/h	18060	18060	18060	18060	18060	18060	18060	18060	18060	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000
	E,U	l/h	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	59000	-	-
	N	l/h	59000	59000	59000	59000	59000	59000	59000	59000	59000	-	-	-	-	-

Size			4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
INTEGRATED HYDRONIC KIT: DC															
Pumps															
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12
	E,U	kW	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	-	-
	N	kW	4,12	4,12	4,12	4,12	4,12	4,12	4,12	4,12	-	-	-	-	-
Maximum current	°A,L	A	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62
	E,U	A	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	-	-
	N	A	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	20430	20430	20430	20430	20430	20430	20430	20430	20430	20430	20430	20430	20430
	E,U	l/h	20430	20430	20430	20430	20430	20430	20430	20430	20430	20430	20430	-	-
	N	l/h	20430	20430	20430	20430	20430	20430	20430	20430	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	71000	71000	71000	71000	71000	71000	71000	71000	71000	71000	71000	71000	71000
	E,U	l/h	71000	71000	71000	71000	71000	71000	71000	71000	71000	71000	71000	-	-
	N	l/h	71000	71000	71000	71000	71000	71000	71000	71000	-	-	-	-	-
INTEGRATED HYDRONIC KIT: DD															
Pumps															
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88
	E,U	kW	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	-	-
	N	kW	5,88	5,88	5,88	5,88	5,88	5,88	5,88	5,88	-	-	-	-	-
Maximum current	°A,L	A	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50
	E,U	A	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	-	-
	N	A	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	23670	23670	23670	23670	23670	23670	23670	23670	23670	23670	23670	23670	23670
	E,U	l/h	23670	23670	23670	23670	23670	23670	23670	23670	23670	23670	23670	-	-
	N	l/h	23670	23670	23670	23670	23670	23670	23670	23670	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	85500	85500	85500	85500	85500	85500	85500	85500	85500	85500	85500	85500	85500
	E,U	l/h	85500	85500	85500	85500	85500	85500	85500	85500	85500	85500	85500	-	-
	N	l/h	85500	85500	85500	85500	85500	85500	85500	85500	-	-	-	-	-
INTEGRATED HYDRONIC KIT: DE															
Pumps															
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14
	E,U	kW	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	-	-
	N	kW	8,14	8,14	8,14	8,14	8,14	8,14	8,14	8,14	-	-	-	-	-
Maximum current	°A,L	A	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10
	E,U	A	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	-	-
	N	A	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	22020	22020	22020	22020	22020	22020	22020	22020	22020	22020	22020	22020	22020
	E,U	l/h	22020	22020	22020	22020	22020	22020	22020	22020	22020	22020	22020	-	-
	N	l/h	22020	22020	22020	22020	22020	22020	22020	22020	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000
	E,U	l/h	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000	-	-
	N	l/h	93000	93000	93000	93000	93000	93000	93000	93000	-	-	-	-	-
INTEGRATED HYDRONIC KIT: DF															
Pumps															
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08
	E,U	kW	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	-	-
	N	kW	10,08	10,08	10,08	10,08	10,08	10,08	10,08	10,08	-	-	-	-	-
Maximum current	°A,L	A	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20
	E,U	A	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	-	-
	N	A	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	27660	27660	27660	27660	27660	27660	27660	27660	27660	27660	27660	27660	27660
	E,U	l/h	27660	27660	27660	27660	27660	27660	27660	27660	27660	27660	27660	-	-
	N	l/h	27660	27660	27660	27660	27660	27660	27660	27660	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000
	E,U	l/h	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	120000	-	-
	N	l/h	120000	120000	120000	120000	120000	120000	120000	120000	-	-	-	-	-

Size			4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
INTEGRATED HYDRONIC KIT: DG															
Pumps															
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73
	E,U	kW	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	-	-
	N	kW	10,73	10,73	10,73	10,73	10,73	10,73	10,73	10,73	-	-	-	-	-
Maximum current	°A,L	A	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20
	E,U	A	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	-	-
	N	A	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	34710	34710	34710	34710	34710	34710	34710	34710	34710	34710	34710	34710	34710
	E,U	l/h	34710	34710	34710	34710	34710	34710	34710	34710	34710	34710	34710	-	-
	N	l/h	34710	34710	34710	34710	34710	34710	34710	34710	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	156990	156990	156990	156990	156990	156990	156990	156990	156990	156990	156990	156990	156990
	E,U	l/h	156990	156990	156990	156990	156990	156990	156990	156990	156990	156990	156990	-	-
	N	l/h	156990	156990	156990	156990	156990	156990	156990	156990	-	-	-	-	-
INTEGRATED HYDRONIC KIT: DH															
Pumps															
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04
	E,U	kW	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	-	-
	N	kW	16,04	16,04	16,04	16,04	16,04	16,04	16,04	16,04	-	-	-	-	-
Maximum current	°A,L	A	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60
	E,U	A	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	-	-
	N	A	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	42150	42150	42150	42150	42150	42150	42150	42150	42150	42150	42150	42150	42150
	E,U	l/h	42150	42150	42150	42150	42150	42150	42150	42150	42150	42150	42150	-	-
	N	l/h	42150	42150	42150	42150	42150	42150	42150	42150	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	185000	185000	185000	185000	185000	185000	185000	185000	185000	185000	185000	185000	185000
	E,U	l/h	185000	185000	185000	185000	185000	185000	185000	185000	185000	185000	185000	-	-
	N	l/h	185000	185000	185000	185000	185000	185000	185000	185000	-	-	-	-	-
INTEGRATED HYDRONIC KIT: DI															
Pumps															
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73
	E,U	kW	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	-	-
	N	kW	19,73	19,73	19,73	19,73	19,73	19,73	19,73	19,73	-	-	-	-	-
Maximum current	°A,L	A	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00
	E,U	A	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	-	-
	N	A	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	46230	46230	46230	46230	46230	46230	46230	46230	46230	46230	46230	46230	46230
	E,U	l/h	46230	46230	46230	46230	46230	46230	46230	46230	46230	46230	46230	-	-
	N	l/h	46230	46230	46230	46230	46230	46230	46230	46230	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	203420	203420	203420	203420	203420	203420	203420	203420	203420	203420	203420	203420	203420
	E,U	l/h	203420	203420	203420	203420	203420	203420	203420	203420	203420	203420	203420	-	-
	N	l/h	203420	203420	203420	203420	203420	203420	203420	203420	-	-	-	-	-
INTEGRATED HYDRONIC KIT: DJ, PJ, TJ															
Pumps															
Nr. poles	°A,E,L,N,U	no.	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)
Maximum input power	°A,E,L,N,U	kW	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)
Maximum current	°A,E,L,N,U	A	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)
Minimum water flow rate	°A,E,L,N,U	l/h	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)
Maximum water flow rate	°A,E,L,N,U	l/h	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)	c.s. (1)
INTEGRATED HYDRONIC KIT: PA															
Pumps															
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50
	E,U	kW	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	-	-
	N	kW	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	-	-	-	-	-
Maximum current	°A,L	A	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56
	E,U	A	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56	-	-
	N	A	4,56	4,56	4,56	4,56	4,56	4,56	4,56	4,56	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000
	E,U	l/h	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	-	-
	N	l/h	11000	11000	11000	11000	11000	11000	11000	11000	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000
	E,U	l/h	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	-	-
	N	l/h	44000	44000	44000	44000	44000	44000	44000	44000	-	-	-	-	-

Size			4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
INTEGRATED HYDRONIC KIT: PB															
Pumps															
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42
	E,U	kW	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42	-	-
	N	kW	3,42	3,42	3,42	3,42	3,42	3,42	3,42	3,42	-	-	-	-	-
Maximum current	°A,L	A	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33
	E,U	A	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	-	-
	N	A	6,33	6,33	6,33	6,33	6,33	6,33	6,33	6,33	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000
	E,U	l/h	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	18000	-	-
	N	l/h	18000	18000	18000	18000	18000	18000	18000	18000	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	47000	47000	47000	47000	47000	47000	47000	47000	47000	47000	47000	47000	47000
	E,U	l/h	47000	47000	47000	47000	47000	47000	47000	47000	47000	47000	47000	-	-
	N	l/h	47000	47000	47000	47000	47000	47000	47000	47000	-	-	-	-	-
INTEGRATED HYDRONIC KIT: PC															
Pumps															
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45
	E,U	kW	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45	-	-
	N	kW	4,45	4,45	4,45	4,45	4,45	4,45	4,45	4,45	-	-	-	-	-
Maximum current	°A,L	A	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62
	E,U	A	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	-	-
	N	A	7,62	7,62	7,62	7,62	7,62	7,62	7,62	7,62	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000
	E,U	l/h	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	-	-
	N	l/h	20000	20000	20000	20000	20000	20000	20000	20000	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	61000	61000	61000	61000	61000	61000	61000	61000	61000	61000	61000	61000	61000
	E,U	l/h	61000	61000	61000	61000	61000	61000	61000	61000	61000	61000	61000	-	-
	N	l/h	61000	61000	61000	61000	61000	61000	61000	61000	-	-	-	-	-
INTEGRATED HYDRONIC KIT: PD															
Pumps															
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57
	E,U	kW	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57	-	-
	N	kW	5,57	5,57	5,57	5,57	5,57	5,57	5,57	5,57	-	-	-	-	-
Maximum current	°A,L	A	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50
	E,U	A	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	-	-
	N	A	10,50	10,50	10,50	10,50	10,50	10,50	10,50	10,50	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	23000	23000	23000	23000	23000	23000	23000	23000	23000	23000	23000	23000	23000
	E,U	l/h	23000	23000	23000	23000	23000	23000	23000	23000	23000	23000	23000	-	-
	N	l/h	23000	23000	23000	23000	23000	23000	23000	23000	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	75000	75000	75000	75000	75000	75000	75000	75000	75000	75000	75000	75000	75000
	E,U	l/h	75000	75000	75000	75000	75000	75000	75000	75000	75000	75000	75000	-	-
	N	l/h	75000	75000	75000	75000	75000	75000	75000	75000	-	-	-	-	-
INTEGRATED HYDRONIC KIT: PE															
Pumps															
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89
	E,U	kW	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89	-	-
	N	kW	7,89	7,89	7,89	7,89	7,89	7,89	7,89	7,89	-	-	-	-	-
Maximum current	°A,L	A	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10
	E,U	A	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	-	-
	N	A	14,10	14,10	14,10	14,10	14,10	14,10	14,10	14,10	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	21000	21000	21000	21000	21000	21000	21000	21000	21000	21000	21000	21000	21000
	E,U	l/h	21000	21000	21000	21000	21000	21000	21000	21000	21000	21000	21000	-	-
	N	l/h	21000	21000	21000	21000	21000	21000	21000	21000	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	97000	97000	97000	97000	97000	97000	97000	97000	97000	97000	97000	97000	97000
	E,U	l/h	97000	97000	97000	97000	97000	97000	97000	97000	97000	97000	97000	-	-
	N	l/h	97000	97000	97000	97000	97000	97000	97000	97000	-	-	-	-	-

Size			4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
INTEGRATED HYDRONIC KIT: PF															
Pumps															
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05
	E,U	kW	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05	-	-
	N	kW	9,05	9,05	9,05	9,05	9,05	9,05	9,05	9,05	-	-	-	-	-
Maximum current	°A,L	A	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20
	E,U	A	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	-	-
	N	A	17,20	17,20	17,20	17,20	17,20	17,20	17,20	17,20	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	27000	27000	27000	27000	27000	27000	27000	27000	27000	27000	27000	27000	27000
	E,U	l/h	27000	27000	27000	27000	27000	27000	27000	27000	27000	27000	27000	-	-
	N	l/h	27000	27000	27000	27000	27000	27000	27000	27000	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	138000	138000	138000	138000	138000	138000	138000	138000	138000	138000	138000	138000	138000
	E,U	l/h	138000	138000	138000	138000	138000	138000	138000	138000	138000	138000	138000	-	-
	N	l/h	138000	138000	138000	138000	138000	138000	138000	138000	-	-	-	-	-
INTEGRATED HYDRONIC KIT: PG															
Pumps															
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98
	E,U	kW	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98	-	-
	N	kW	10,98	10,98	10,98	10,98	10,98	10,98	10,98	10,98	-	-	-	-	-
Maximum current	°A,L	A	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20
	E,U	A	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	-	-
	N	A	20,20	20,20	20,20	20,20	20,20	20,20	20,20	20,20	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000
	E,U	l/h	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	44000	-	-
	N	l/h	44000	44000	44000	44000	44000	44000	44000	44000	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	205000	205000	205000	205000	205000	205000	205000	205000	205000	205000	205000	205000	205000
	E,U	l/h	205000	205000	205000	205000	205000	205000	205000	205000	205000	205000	205000	-	-
	N	l/h	205000	205000	205000	205000	205000	205000	205000	205000	-	-	-	-	-
INTEGRATED HYDRONIC KIT: PH															
Pumps															
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49
	E,U	kW	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49	-	-
	N	kW	15,49	15,49	15,49	15,49	15,49	15,49	15,49	15,49	-	-	-	-	-
Maximum current	°A,L	A	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60
	E,U	A	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	-	-
	N	A	26,60	26,60	26,60	26,60	26,60	26,60	26,60	26,60	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000
	E,U	l/h	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	-	-
	N	l/h	50000	50000	50000	50000	50000	50000	50000	50000	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	235000	235000	235000	235000	235000	235000	235000	235000	235000	235000	235000	235000	235000
	E,U	l/h	235000	235000	235000	235000	235000	235000	235000	235000	235000	235000	235000	-	-
	N	l/h	235000	235000	235000	235000	235000	235000	235000	235000	-	-	-	-	-
INTEGRATED HYDRONIC KIT: PI															
Pumps															
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90
	E,U	kW	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	-	-
	N	kW	18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	-	-	-	-	-
Maximum current	°A,L	A	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00
	E,U	A	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	-	-
	N	A	33,00	33,00	33,00	33,00	33,00	33,00	33,00	33,00	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	55000	55000	55000	55000	55000	55000	55000	55000	55000	55000	55000	55000	55000
	E,U	l/h	55000	55000	55000	55000	55000	55000	55000	55000	55000	55000	55000	-	-
	N	l/h	55000	55000	55000	55000	55000	55000	55000	55000	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	257000	257000	257000	257000	257000	257000	257000	257000	257000	257000	257000	257000	257000
	E,U	l/h	257000	257000	257000	257000	257000	257000	257000	257000	257000	257000	257000	-	-
	N	l/h	257000	257000	257000	257000	257000	257000	257000	257000	-	-	-	-	-

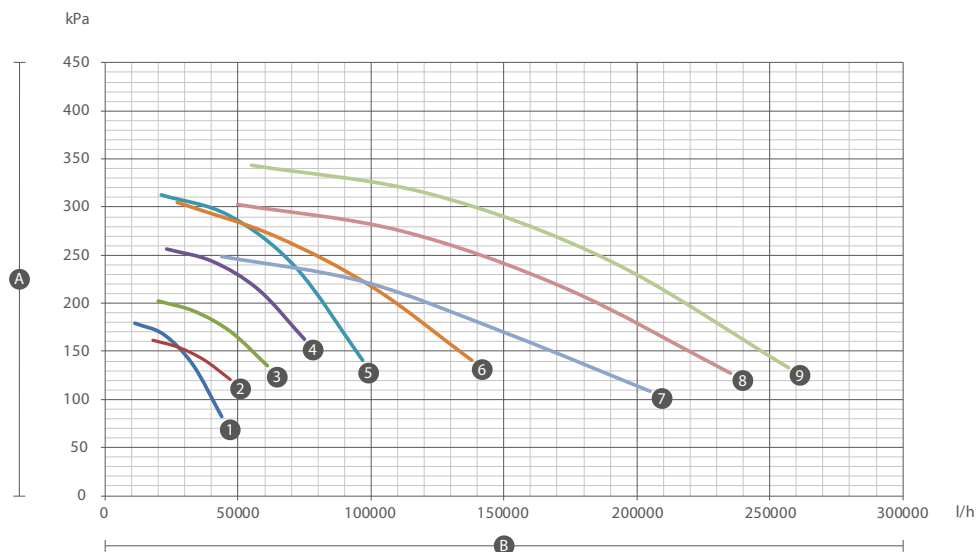
Size			4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
INTEGRATED HYDRONIC KIT: TF															
Pumps															
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	20,15	20,15	20,15	20,15	20,15	20,15	20,15	20,15	20,15	20,15	20,15	20,15	20,15
	E,U	kW	20,15	20,15	20,15	20,15	20,15	20,15	20,15	20,15	20,15	20,15	20,15	-	-
	N	kW	20,15	20,15	20,15	20,15	20,15	20,15	20,15	20,15	-	-	-	-	-
Maximum current	°A,L	A	34,40	34,40	34,40	34,40	34,40	34,40	34,40	34,40	34,40	34,40	34,40	34,40	34,40
	E,U	A	34,40	34,40	34,40	34,40	34,40	34,40	34,40	34,40	34,40	34,40	34,40	-	-
	N	A	34,40	34,40	34,40	34,40	34,40	34,40	34,40	34,40	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	55320	55320	55320	55320	55320	55320	55320	55320	55320	55320	55320	55320	55320
	E,U	l/h	55320	55320	55320	55320	55320	55320	55320	55320	55320	55320	55320	-	-
	N	l/h	55320	55320	55320	55320	55320	55320	55320	55320	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	240000	240000	240000	240000	240000	240000	240000	240000	240000	240000	240000	240000	240000
	E,U	l/h	240000	240000	240000	240000	240000	240000	240000	240000	240000	240000	240000	-	-
	N	l/h	240000	240000	240000	240000	240000	240000	240000	240000	-	-	-	-	-
INTEGRATED HYDRONIC KIT: TG															
Pumps															
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	21,46	21,46	21,46	21,46	21,46	21,46	21,46	21,46	21,46	21,46	21,46	21,46	21,46
	E,U	kW	21,46	21,46	21,46	21,46	21,46	21,46	21,46	21,46	21,46	21,46	21,46	-	-
	N	kW	21,46	21,46	21,46	21,46	21,46	21,46	21,46	21,46	-	-	-	-	-
Maximum current	°A,L	A	40,40	40,40	40,40	40,40	40,40	40,40	40,40	40,40	40,40	40,40	40,40	40,40	40,40
	E,U	A	40,40	40,40	40,40	40,40	40,40	40,40	40,40	40,40	40,40	40,40	40,40	-	-
	N	A	40,40	40,40	40,40	40,40	40,40	40,40	40,40	40,40	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	69420	69420	69420	69420	69420	69420	69420	69420	69420	69420	69420	69420	69420
	E,U	l/h	69420	69420	69420	69420	69420	69420	69420	69420	69420	69420	69420	-	-
	N	l/h	69420	69420	69420	69420	69420	69420	69420	69420	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	313980	313980	313980	313980	313980	313980	313980	313980	313980	313980	313980	313980	313980
	E,U	l/h	313980	313980	313980	313980	313980	313980	313980	313980	313980	313980	313980	-	-
	N	l/h	313980	313980	313980	313980	313980	313980	313980	313980	-	-	-	-	-
INTEGRATED HYDRONIC KIT: TH															
Pumps															
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	32,08	32,08	32,08	32,08	32,08	32,08	32,08	32,08	32,08	32,08	32,08	32,08	32,08
	E,U	kW	32,08	32,08	32,08	32,08	32,08	32,08	32,08	32,08	32,08	32,08	32,08	-	-
	N	kW	32,08	32,08	32,08	32,08	32,08	32,08	32,08	32,08	-	-	-	-	-
Maximum current	°A,L	A	53,20	53,20	53,20	53,20	53,20	53,20	53,20	53,20	53,20	53,20	53,20	53,20	53,20
	E,U	A	53,20	53,20	53,20	53,20	53,20	53,20	53,20	53,20	53,20	53,20	53,20	-	-
	N	A	53,20	53,20	53,20	53,20	53,20	53,20	53,20	53,20	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	84300	84300	84300	84300	84300	84300	84300	84300	84300	84300	84300	84300	84300
	E,U	l/h	84300	84300	84300	84300	84300	84300	84300	84300	84300	84300	84300	-	-
	N	l/h	84300	84300	84300	84300	84300	84300	84300	84300	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	370000	370000	370000	370000	370000	370000	370000	370000	370000	370000	370000	370000	370000
	E,U	l/h	370000	370000	370000	370000	370000	370000	370000	370000	370000	370000	370000	-	-
	N	l/h	370000	370000	370000	370000	370000	370000	370000	370000	-	-	-	-	-
INTEGRATED HYDRONIC KIT: TI															
Pumps															
Nr. poles	°A,L	no.	2	2	2	2	2	2	2	2	2	2	2	2	2
	E,U	no.	2	2	2	2	2	2	2	2	2	2	2	-	-
	N	no.	2	2	2	2	2	2	2	2	-	-	-	-	-
Maximum input power	°A,L	kW	39,46	39,46	39,46	39,46	39,46	39,46	39,46	39,46	39,46	39,46	39,46	39,46	39,46
	E,U	kW	39,46	39,46	39,46	39,46	39,46	39,46	39,46	39,46	39,46	39,46	39,46	-	-
	N	kW	39,46	39,46	39,46	39,46	39,46	39,46	39,46	39,46	-	-	-	-	-
Maximum current	°A,L	A	66,00	66,00	66,00	66,00	66,00	66,00	66,00	66,00	66,00	66,00	66,00	66,00	66,00
	E,U	A	66,00	66,00	66,00	66,00	66,00	66,00	66,00	66,00	66,00	66,00	66,00	-	-
	N	A	66,00	66,00	66,00	66,00	66,00	66,00	66,00	66,00	-	-	-	-	-
Minimum water flow rate	°A,L	l/h	92460	92460	92460	92460	92460	92460	92460	92460	92460	92460	92460	92460	92460
	E,U	l/h	92460	92460	92460	92460	92460	92460	92460	92460	92460	92460	92460	-	-
	N	l/h	92460	92460	92460	92460	92460	92460	92460	92460	-	-	-	-	-
Maximum water flow rate	°A,L	l/h	406840	406840	406840	406840	406840	406840	406840	406840	406840	406840	406840	406840	406840
	E,U	l/h	406840	406840	406840	406840	406840	406840	406840	406840	406840	406840	406840	-	-
	N	l/h	406840	406840	406840	406840	406840	406840	406840	406840	-	-	-	-	-

(1) contact the factory

PA÷PI

The table shows the characteristic curves of the pumps, **and therefore they do not represent the useful static pressures of the system.**

The useful static pressures of the system must be calculated by subtracting the pressure drop (Δp) of the unit from the static pressure of the pump that is read in this graph.



A Pumps static pressure (kPa)

B Water flow rate (l/h)

1 PA

2 PB

3 PC

4 PD

5 PE

6 PF

7 PG

8 PH

9 PI

Compatibility with the hydronic kits PA÷PJ

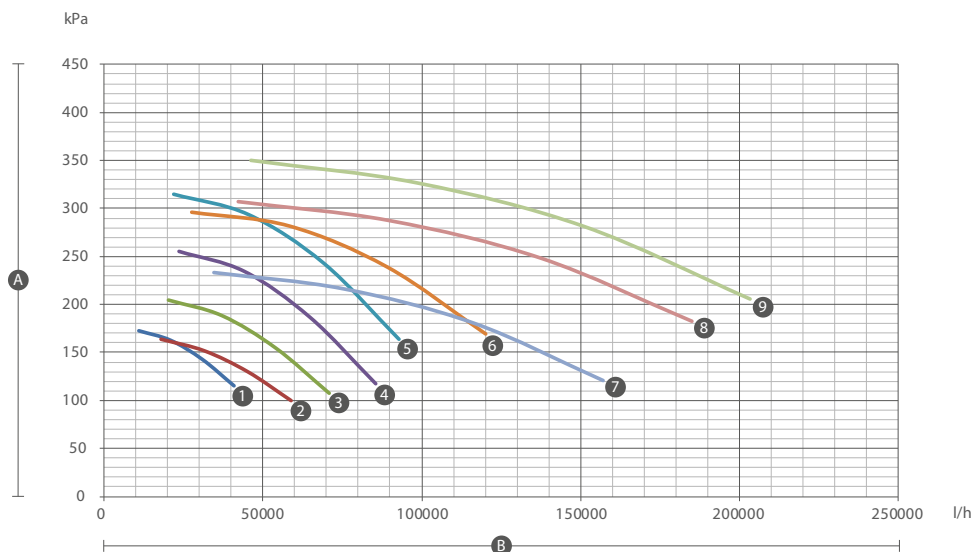
Size	Version	Evaporator	Module	Hydronic kit with single pump									
				PA	PB	PC	PD	PE	PF	PG	PH	PI	PJ
		no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.
1402	°-L-A-E-U-N	1	1	1	1	1	1	1	1	1	1	1	*
1602	°-L-A-E-U-N	1	1	1	1	1	1	1	1	1	1	1	*
1802	°-L-A-E-U-N	1	1	1	1	1	1	1	1	1	1	1	*
2002	°-L-A-E-U-N	1	1	1	1	1	1	1	1	1	1	1	*
2202	°-L-A-E-U-N	1	1	1	1	1	1	1	1	1	1	1	*
2352	°-L-A-E-U-N	1	1	-	1	1	1	1	1	1	1	1	*
2502	°-L-A-E-U-N	1	1	-	-	1	1	1	1	1	1	1	*
2652	°-L-A-E-U-N	1	1	-	-	1	1	1	1	1	1	1	*
2802	°-L-A-E-U-N	1	1	-	-	1	1	1	1	1	1	1	*
3002	°-L-A-E-U-N	1	1	-	-	1	1	1	1	1	1	1	*
3202	°-L-A-E-U-N	1	1	-	-	-	1	1	1	1	1	1	*
3402	°-L-A-E-U-N	1	1	-	-	-	1	1	1	1	1	1	*
3602	°-L-A-E-U-N	1	1	-	-	-	1	1	1	1	1	1	*
3902	°-L-A-E-U-N	1	1	-	-	-	-	1	1	1	1	1	*
4202	°-L-A-E-U-N	1	1	-	-	-	-	1	1	1	1	1	*
4502	°-L-A-E-U	1	1	-	-	-	-	-	1	1	1	1	*
	N	2	2	-	-	-	-	-	2	2	2	2	*
4802	°-L-A-E-U	1	1	-	-	-	-	-	1	1	1	1	*
	N	2	2	-	-	-	-	-	2	2	2	2	*
5202	°-L-A-E-U	1	1	-	-	-	-	-	1	1	1	1	*
	N	2	2	-	-	-	-	-	2	2	2	2	*
5602	°-L-A	1	1	-	-	-	-	-	1	1	1	1	*
	E-U-N	2	2	-	-	-	-	-	2	2	2	2	*
6002	°-L-A	1	1	-	-	-	-	-	1	1	1	1	*
	E-U-N	2	2	-	-	-	-	-	2	2	2	2	*
6402	°-L-A	1	1	-	-	-	-	-	1	1	1	1	*
	E-U-N	2	2	-	-	-	-	-	2	2	2	2	*
6503	°	1	1	-	-	-	-	-	-	-	-	-	*
	L-A-E-U-N	2	2	-	-	-	-	-	-	-	-	-	*
6703	°	1	1	-	-	-	-	-	-	-	-	-	*
	L-A-E-U-N	2	2	-	-	-	-	-	-	-	-	-	*
6903	°	1	1	-	-	-	-	-	-	-	-	-	*
	L-A-E-U-N	2	2	-	-	-	-	-	-	-	-	-	*
7203	°	1	1	-	-	-	-	-	-	-	-	-	*
	L-A-E-U	2	2	-	-	-	-	-	-	-	-	-	*
8403	°	1	1	-	-	-	-	-	-	-	-	-	*
	L-A	2	2	-	-	-	-	-	-	-	-	-	*
9603	°	1	1	-	-	-	-	-	-	-	-	-	*
	L-A	2	2	-	-	-	-	-	-	-	-	-	*

* For all configurations including pump J please contact the factory.

DA÷DI

The table shows the characteristic curves of the pumps, **and therefore they do not represent the useful static pressures of the system.**

The useful static pressures of the system must be calculated by subtracting the pressure drop (Δp) of the unit from the static pressure of the pump that is read in this graph.



A Pumps static pressure (kPa)

B Water flow rate (l/h)

1 DA

2 DB

3 DC

4 DD

5 DE

6 DF

7 DG

8 DH

9 DI

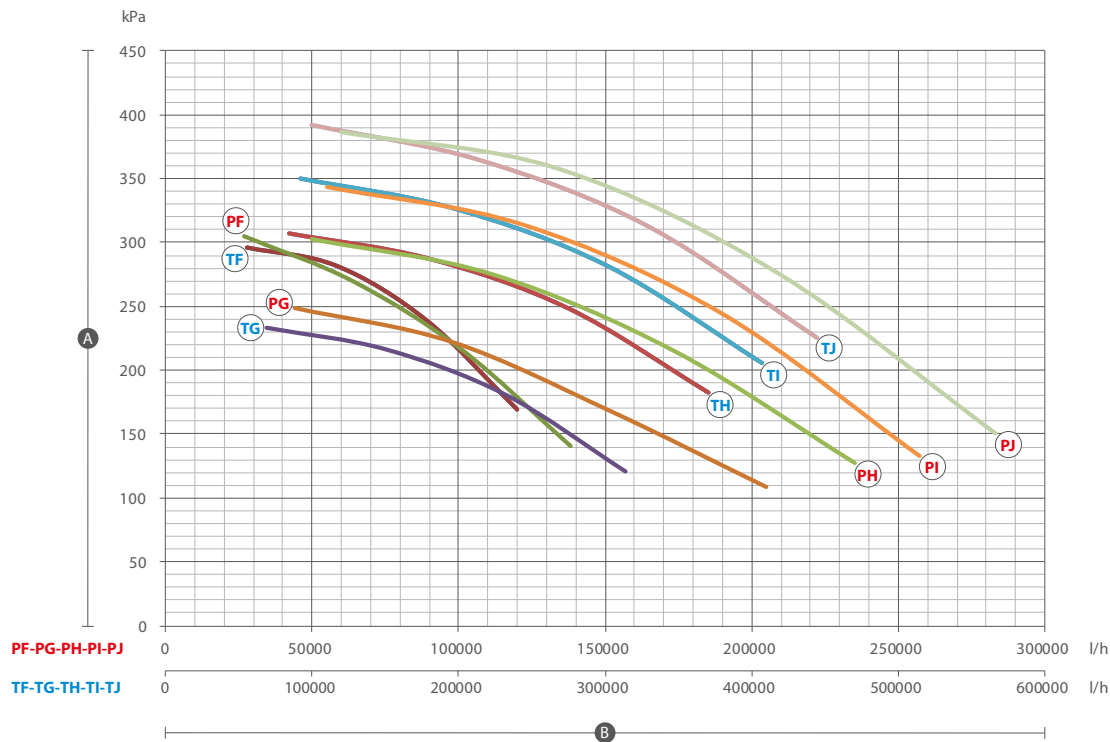
Compatibility with the hydronic kits DA÷DJ

Size	Version	Evaporator no.	Module no.	Hydronic kits with pump + stand-by pump									
				DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ
				no.	no.	no.	no.	no.	no.	no.	no.	no.	no.
1402	°-L-A-E-U-N	1	1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*
1602	°-L-A-E-U-N	1	1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*
1802	°-L-A-E-U-N	1	1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*
2002	°-L-A-E-U-N	1	1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*
2202	°-L-A-E-U-N	1	1	-	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*
2352	°-L-A-E-U-N	1	1	-	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*
2502	°-L-A-E-U-N	1	1	-	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*
2652	°-L-A-E-U-N	1	1	-	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*
2802	°-L-A-E-U-N	1	1	-	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*
3002	°-L-A-E-U-N	1	1	-	-	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*
3202	°-L-A-E-U-N	1	1	-	-	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*
3402	°-L-A-E-U-N	1	1	-	-	1+1	1+1	1+1	1+1	1+1	1+1	1+1	*
3602	°-L-A-E-U-N	1	1	-	-	-	1+1	1+1	1+1	1+1	1+1	1+1	*
3902	°-L-A-E-U-N	1	1	-	-	-	1+1	1+1	1+1	1+1	1+1	1+1	*
4202	°-L-A-E-U-N	1	1	-	-	-	1+1	1+1	1+1	1+1	1+1	1+1	*
4502	°-L-A-E-U	1	1	-	-	-	-	-	1+1	1+1	1+1	1+1	*
	N	2	2	-	-	-	-	-	2+2	2+2	2+2	2+2	*
4802	°-L-A-E-U	1	1	-	-	-	-	-	1+1	1+1	1+1	1+1	*
	N	2	2	-	-	-	-	-	2+2	2+2	2+2	2+2	*
5202	°-L-A-E-U	1	1	-	-	-	-	-	1+1	1+1	1+1	1+1	*
	N	2	2	-	-	-	-	-	2+2	2+2	2+2	2+2	*
5602	°-L-A	1	1	-	-	-	-	-	1+1	1+1	1+1	1+1	*
	E-U-N	2	2	-	-	-	-	-	2+2	2+2	2+2	2+2	*
6002	°-L-A	1	1	-	-	-	-	-	1+1	1+1	1+1	1+1	*
	E-U-N	2	2	-	-	-	-	-	2+2	2+2	2+2	2+2	*
6402	°-L-A	1	1	-	-	-	-	-	1+1	1+1	1+1	1+1	*
	E-U-N	2	2	-	-	-	-	-	2+2	2+2	2+2	2+2	*
6503	°	1	1	-	-	-	-	-	-	-	-	-	*
	L-A-E-U-N	2	2	-	-	-	-	-	-	-	-	-	*
6703	°	1	1	-	-	-	-	-	-	-	-	-	*
	L-A-E-U-N	2	2	-	-	-	-	-	-	-	-	-	*
6903	°	1	1	-	-	-	-	-	-	-	-	-	*
	L-A-E-U-N	2	2	-	-	-	-	-	-	-	-	-	*
7203	°	1	1	-	-	-	-	-	-	-	-	-	*
	L-A-E-U	2	2	-	-	-	-	-	-	-	-	-	*
8403	°	1	1	-	-	-	-	-	-	-	-	-	*
	L-A	2	2	-	-	-	-	-	-	-	-	-	*
9603	°	1	1	-	-	-	-	-	-	-	-	-	*
	L-A	2	2	-	-	-	-	-	-	-	-	-	*

* For all configurations including pump J please contact the factory.

TF÷TJ / PF÷PJ

The table shows the characteristic curves of the pumps, **and therefore they do not represent the useful static pressures of the system.**
The useful static pressures of the system must be calculated by subtracting the pressure drop (Δp) of the unit from the static pressure of the pump that is read in this graph.



- A Pumps static pressure (kPa)
- B Water flow rate (l/h)

- ⚠ Combination of Hydronic kit with double pump (T) + Hydronic kit with single pump (P):** only available for sizes 6503-9603 TRIPLE CIRCUIT-DOUBLE MODULE.
- ⚠ WARNING:** in this specific case, add together the water flow rates of the hydronic kit (T) and hydronic kit (P)

Size	Version	Evaporator	Module	Hydronic kits with double-parallel pump (all pumps in operation)				
				TF	TG	TH	TI	TJ
		no.	no.	no.	no.	no.	no.	no.
1402	°-L-A-E-U-N	1	1	2	2	-	-	*
1602	°-L-A-E-U-N	1	1	2	2	2	-	*
1802	°-L-A-E-U-N	1	1	2	2	2	2	*
2002	°-L-A-E-U-N	1	1	2	2	2	2	*
2202	°-L-A-E-U-N	1	1	2	2	2	2	*
2352	°-L-A-E-U-N	1	1	2	2	2	2	*
2502	°-L-A-E-U-N	1	1	2	2	2	2	*
2652	°-L-A-E-U-N	1	1	2	2	2	2	*
2802	°-L-A-E-U-N	1	1	2	2	2	2	*
3002	°-L-A-E-U-N	1	1	2	2	2	2	*
3202	°-L-A-E-U-N	1	1	2	2	2	2	*
3402	°-L-A-E-U-N	1	1	2	2	2	2	*
3602	°-L-A-E-U-N	1	1	2	2	2	2	*
3902	°-L-A-E-U-N	1	1	2	2	2	2	*
4202	°-L-A-E-U-N	1	1	2	2	2	2	*
4502	°-L-A-E-U	1	1	2	2	2	2	*
	N	2	2	4	4	4	4	*
4802	°-L-A-E-U	1	1	2	2	2	2	*
	N	2	2	4	4	4	4	*
5202	°-L-A-E-U	1	1	2	2	2	2	*
	N	2	2	4	4	4	4	*
5602	°-L-A	1	1	2	2	2	2	*
	E-U-N	2	2	4	4	4	4	*
6002	°-L-A	1	1	2	2	2	2	*
	E-U-N	2	2	4	4	4	4	*
6402	°-L-A	1	1	2	2	2	2	*
	E-U-N	2	2	4	4	4	4	*
6503	°	1	1	2	2	2	2	*
	L-A-E-U-N	2	2	3	3	3	3	*
6703	°	1	1	2	2	2	2	*
	L-A-E-U-N	2	2	3	3	3	3	*
6903	°	1	1	2	2	2	2	*
	L-A-E-U-N	2	2	3	3	3	3	*
7203	°	1	1	2	2	2	2	*
	L-A-E-U	2	2	3	3	3	3	*
8403	°	1	1	2	2	2	2	*
	L-A	2	2	3	3	3	3	*
9603	°	1	1	2	2	2	2	*
	L-A	2	2	3	3	3	3	*

Hydronic kit with double pump - in parallel (all pumps running) TF - TG - TH - TI - TJ**2** - Hydronic kit with double pump (T), all pumps running**3** - Hydronic kit with double pump (T) + Hydronic kit with single pump (P), all pumps running**4** - Hydronic kit with double pump (T) + Hydronic kit with double pump (T), all pumps running

20 SYSTEM WATER CONTENT

MINIMUM SYSTEM WATER CONTENT

For correct unit operation, there must be a suitable amount of water in the system. A sufficient quantity of water not only ensures machine stability, but also helps avoid a high number of hourly compressor start-ups.

To calculate it, use the formula: Unit rated cooling capacity (kW) x table value (l/kW) = Minimum system content (l).

Size			1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Compressor																
Number	°A,E,L,N,U	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Minimum system water content (1)																
Minimum water content for air conditioning	°	m ³	2,20	2,50	2,80	3,20	3,40	3,70	3,80	4,00	4,30	4,90	5,30	5,50	5,70	6,30
	A	m ³	2,20	2,50	2,90	3,20	3,60	3,80	4,00	4,30	4,60	5,00	5,40	5,80	6,20	6,70
	E	m ³	2,30	2,60	2,90	3,30	3,60	3,80	4,10	4,30	4,60	5,00	5,40	5,70	6,10	6,60
	L	m ³	2,10	2,40	2,80	3,00	3,40	3,60	3,80	4,10	4,20	4,80	5,10	5,60	5,80	6,30
	N	m ³	2,30	2,60	3,00	3,30	3,60	3,90	4,00	4,30	4,60	5,00	5,40	5,80	6,10	6,70
	U	m ³	2,30	2,70	3,00	3,40	3,70	4,00	4,10	4,40	4,70	5,10	5,50	5,80	6,30	6,80
Minimum water content for processes	°	m ³	4,40	4,90	5,60	6,30	6,90	7,40	7,60	8,10	8,60	9,80	10,60	11,00	11,40	12,60
	A	m ³	4,50	5,10	5,90	6,50	7,20	7,60	8,10	8,70	9,20	10,00	10,80	11,50	12,30	13,30
	E	m ³	4,50	5,20	5,90	6,60	7,20	7,60	8,10	8,60	9,10	10,10	10,80	11,40	12,30	13,30
	L	m ³	4,30	4,90	5,50	6,00	6,90	7,20	7,50	8,20	8,40	9,60	10,30	11,10	11,50	12,70
	N	m ³	4,70	5,30	6,10	6,70	7,30	7,70	8,10	8,70	9,20	10,00	10,70	11,60	12,30	13,30
	U	m ³	4,70	5,30	6,10	6,80	7,40	7,90	8,30	8,90	9,40	10,10	10,90	11,70	12,60	13,60

(1) Calculated with a minimum load factor 15%

Size			4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Compressor															
Number	°A,L	no.	2	2	2	2	2	2	2	3	3	3	3	3	3
	E,U	no.	2	2	2	2	2	2	2	3	3	3	3	-	-
	N	no.	2	2	2	2	2	2	2	3	-	-	-	-	-
Minimum system water content (1)															
Minimum water content for air conditioning	°	m³	6,70	7,30	7,60	8,10	8,30	8,60	9,20	9,70	10,00	11,00	11,60	12,10	12,90
	A	m³	7,10	7,50	8,10	8,40	8,90	9,40	9,70	10,20	10,60	11,70	12,20	13,20	14,60
	E	m³	7,10	7,50	8,10	8,40	8,80	9,20	9,70	10,20	10,60	11,60	12,20	-	-
	L	m³	6,60	7,20	7,50	7,80	8,20	8,70	9,00	9,70	10,00	11,10	11,40	12,20	13,50
	N	m³	7,10	7,60	8,10	8,50	8,80	9,20	9,50	10,10	-	-	-	-	-
	U	m³	7,30	7,70	8,20	8,60	9,00	9,50	9,90	10,50	11,00	11,80	12,30	-	-
Minimum water content for processes	°	m³	13,40	14,60	15,30	16,20	16,60	17,20	18,40	19,40	20,00	21,90	23,20	24,20	25,80
	A	m³	14,20	15,10	16,10	16,90	17,80	18,80	19,50	20,30	21,30	23,40	24,30	26,50	29,20
	E	m³	14,20	15,10	16,10	16,80	17,60	18,40	19,30	20,30	21,20	23,20	24,30	-	-
	L	m³	13,20	14,40	15,00	15,60	16,50	17,40	18,00	19,40	20,00	22,30	22,90	24,40	27,00
	N	m³	14,10	15,10	16,30	17,00	17,60	18,30	19,00	20,20	-	-	-	-	-
	U	m³	14,50	15,40	16,50	17,20	18,10	18,90	19,70	20,90	21,90	23,50	24,60	-	-

(1) Calculated with a minimum load factor 15%

MAXIMUM SYSTEM WATER CONTENT

Units with the hydronic kit mounted come standard with the expansion vessel set at 1.5 bar, the pressure relief valve, the flow switch and the water filter mounted. The maximum system water content depends on the capacity of the expansion vessel and on the calibration of the pressure relief valve.

Size	1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
INTEGRATED HYDRONIC KIT: 00														
Hydronic kit														
Expansion vessel number	°A,E,L,N,U	no.												
Expansion vessel capacity	°A,E,L,N,U	l												
Pressure relief valve	°A,E,L,N,U	n°/bar												
INTEGRATED HYDRONIC KIT: DA, DB, DC, DD, DE, DF, DG, DH, DI, PA, PB, PC, PD, PE, PF, PG, PH, PI, TF, TG, TH, TI														
Hydronic kit														
Expansion vessel number	°A,E,L,N,U	no.						2						
Expansion vessel capacity	°A,E,L,N,U	l						25						
Pressure relief valve	°A,E,L,N,U	n°/bar						1/6 bar						
INTEGRATED HYDRONIC KIT: DJ, PJ, TJ														
Hydronic kit														
Expansion vessel number	°A,E,L,N,U	no.						- (1)						
Expansion vessel capacity	°A,E,L,N,U	l						- (1)						
Pressure relief valve	°A,E,L,N,U	n°/bar						- (1)						

(1) contact the factory

Size			4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
INTEGRATED HYDRONIC KIT: 00															
Hydronic kit															
Expansion vessel number	°A,E,L,N,U	no.													
Expansion vessel capacity	°A,E,L,N,U	l													
Pressure relief valve	°A,E,L,N,U	n°/bar													
INTEGRATED HYDRONIC KIT: DA, DB, DC, DD, DE, DF, DG, DH, DI, PA, PB, PC, PD, PE, PF, PG, PH, PI, TF, TG, TH, TI															
Hydronic kit															
	°	no.							2						
Expansion vessel number	A,L	no.	2	2	2	2	2	2	2	4	4	4	4	4	4
	E,U	no.	2	2	2	2	4	4	4	4	4	4	4	-	-
	N	no.	2	4	4	4	4	4	4	4	-	-	-	-	-
Expansion vessel capacity	°A,L	l							25						
	E,U	l	25	25	25	25	25	25	25	25	25	25	25	-	-
	N	l	25	25	25	25	25	25	25	25	-	-	-	-	-
Pressure relief valve	°A,L	n°/bar							1/6 bar						
	E,U	n°/bar	1/6 bar	1/6 bar	1/6 bar	1/6 bar	1/6 bar	1/6 bar	1/6 bar	1/6 bar	1/6 bar	1/6 bar	1/6 bar	-	-
	N	n°/bar	1/6 bar	1/6 bar	1/6 bar	1/6 bar	1/6 bar	1/6 bar	1/6 bar	1/6 bar	-	-	-	-	-
INTEGRATED HYDRONIC KIT: DJ, PJ, TJ															
Hydronic kit															
Expansion vessel number	°A,E,L,N,U	no.							- (1)						
Expansion vessel capacity	°A,E,L,N,U	l							- (1)						
Pressure relief valve	°A,E,L,N,U	n°/bar							- (1)						

(1) contact the factory

The table gives an example of the maximum water content calculated at the indicated operating conditions and only to protect the unit. If the volume of water in the system is higher, add another expansion vessel of the correct size.

System water temperature max/min	°C	40/4				
Hydraulic height	M	30	25	20	15	≤12,25
Expansion vessel pre-load	bar	3,2	2,8	2,3	1,8	1,5
Water content maximum	l	2174	2646	3118	3590	3852
System water temperature max/min	°C	60/4				
Expansion vessel pre-load	bar	3,2	2,8	2,3	1,8	1,5
Water content maximum	l	978	1190	1404	1616	1732

The data in the table refers to units with a 24l expansion vessel and a water temperature (in/out) of 12°C/7°C.

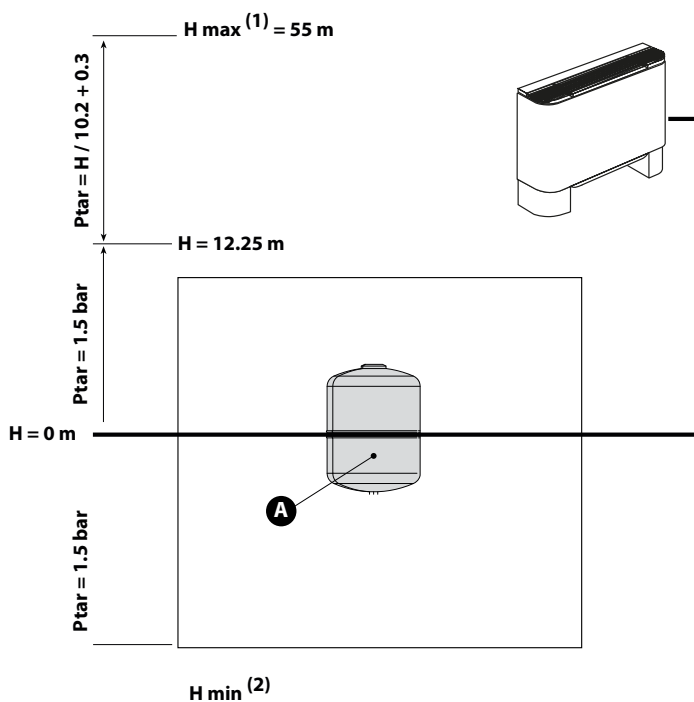
EXPANSION VESSEL SETTING

The expansion tank volume is 24l. The standard value of the expansion tank pre-charge pressure is 1.5 bar, but this can be calibrated up to a maximum of 6 bar.

The expansion tank pressure setting has to be adjusted based on the difference in height (H) of the installation (see figure) according to the formula: $p \text{ (rating) [bar]} = H \text{ [m]} / 10.2 + 0.3$.

For example, if the difference in height H is 20 m then the value of the expansion tank pressure setting is 2.3 bar.

If the calculated pressure setting value is less than 1.5 bar (when $H < 12.25$), maintain the standard pressure setting.



Key

- A Expansion vessel
- 1 Check that highest utility is not higher than 55 metres
- 2 Ensure that lowest utility can withstand global pressure in that position

21 WATER CONNECTIONS WITH HYDRONIC KITS

Size			1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902	
INTEGRATED HYDRONIC KIT: 00																	
Hydraulic connections																	
Connections (in/out)		°A,E,L,N,U	Type	Grooved joints													
Size (in)		°	Ø	5"	5"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"
		A,L	Ø	5"	5"	6"	6"	6"	6"	6"	6"	6"	6"	6"	8"	8"	8"
		E,N,U	Ø	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	8"	8"	8"
Size (out)		°	Ø	5"	5"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"
		A,L	Ø	5"	5"	6"	6"	6"	6"	6"	6"	6"	6"	6"	8"	8"	8"
		E,N,U	Ø	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	8"	8"	8"
INTEGRATED HYDRONIC KIT: DA, DB, DC, DD, DE, DF, PA, PB, PC, PD, PE, PF, TF																	
Hydraulic connections																	
Connections (in/out)		°A,E,L,N,U	Type	Grooved joints													
Size (in)		°A,L	Ø	5"	5"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"
		E,N,U	Ø	6"													
Size (out)		°A,L	Ø	5"	5"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"
		E,N,U	Ø	6"													
INTEGRATED HYDRONIC KIT: DG, DH, DI, DJ, PG, PH, PI, PJ, TG, TH, TI, TJ																	
Hydraulic connections																	
Connections (in/out)		°A,E,L,N,U	Type	Grooved joints													
Size (in)		°A,E,L,N,U	Ø	6"													
Size (out)		°A,E,L,N,U	Ø	6"													

Size			4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
INTEGRATED HYDRONIC KIT: 00															
Hydraulic connections															
Connections (in/out)		° , A, E, L, N, U	Type	Grooved joints											
Size (in)		°	Ø	6"	6"	8"	8"	8"	8"	8"	10"	10"	10"	10"	10"
		A, L	Ø	8"	8"	8"	10"	10"	10"	10"	-	-	-	-	-
		E, U	Ø	8"	8"	10"	10"	-	-	-	-	-	-	-	-
		N	Ø	8"	-	-	-	-	-	-	-	-	-	-	-
Size (out)		°	Ø	6"	6"	8"	8"	8"	8"	10"	10"	10"	10"	10"	10"
		A, L	Ø	8"	8"	8"	10"	10"	10"	10"	-	-	-	-	-
		E, U	Ø	8"	8"	10"	10"	-	-	-	-	-	-	-	-
		N	Ø	8"	-	-	-	-	-	-	-	-	-	-	-
Module 1															
Size (in)		°	Ø												
		A, L	Ø	-	-	-	-	-	-	8"	8"	8"	8"	10"	10"
		E, U	Ø	-	-	-	-	6"	6"	6"	8"	8"	8"	10"	-
		N	Ø	-	6"	6"	6"	6"	6"	6"	8"	-	-	-	-
Size (out)		°	Ø												
		A, L	Ø	-	-	-	-	-	-	8"	8"	8"	8"	10"	10"
		E, U	Ø	-	-	-	-	6"	6"	6"	8"	8"	8"	10"	-
		N	Ø	-	6"	6"	6"	6"	6"	6"	8"	-	-	-	-
Module 2															
Size (in)		°	Ø												
		A, L	Ø	-	-	-	-	-	-	6"	6"	6"	6"	6"	6"
		E, U	Ø	-	-	-	-	6"	6"	6"	6"	6"	6"	-	-
		N	Ø	-	6"	6"	6"	6"	6"	6"	6"	-	-	-	-
Size (out)		°	Ø												
		A, L	Ø	-	-	-	-	-	-	6"	6"	6"	6"	6"	6"
		E, U	Ø	-	-	-	-	6"	6"	6"	6"	6"	6"	-	-
		N	Ø	-	6"	6"	6"	6"	6"	6"	6"	-	-	-	-
INTEGRATED HYDRONIC KIT: DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, TF, TG, TH, TI, TJ															
Hydraulic connections															
Connections (in/out)		° , A, E, L, N, U	Type	Grooved joints											
Size (in)		°	Ø												
		A, L	Ø	6"	6"	6"	6"	6"	6"	6"	-	-	-	-	-
		E, U	Ø	6"	6"	6"	6"	-	-	-	-	-	-	-	-
		N	Ø	6"	-	-	-	-	-	-	-	-	-	-	-
Size (out)		°	Ø	6"	6"	6"	6"	6"	6"	6"	8"	8"	8"	8"	8"
		A, L	Ø	6"	6"	6"	8"	8"	8"	8"	-	-	-	-	-
		E, U	Ø	6"	6"	8"	8"	-	-	-	-	-	-	-	-
		N	Ø	6"	-	-	-	-	-	-	-	-	-	-	-
Module 1															
Size (in)		°	Ø												
		A, L	Ø	-	-	-	-	-	-	6"	6"	6"	6"	6"	6"
		E, U	Ø	-	-	-	-	6"	6"	6"	6"	6"	6"	-	-
		N	Ø	-	6"	6"	6"	6"	6"	6"	6"	-	-	-	-
Size (out)		°	Ø												
		A, L	Ø	-	-	-	-	-	-	6"	6"	6"	6"	8"	8"
		E, U	Ø	-	-	-	-	6"	6"	6"	6"	6"	8"	-	-
		N	Ø	-	6"	6"	6"	6"	6"	6"	6"	-	-	-	-
Module 2															
Size (in)		°	Ø												
		A, L	Ø	-	-	-	-	-	-	6"	6"	6"	6"	6"	6"
		E, U	Ø	-	-	-	-	6"	6"	6"	6"	6"	6"	-	-
		N	Ø	-	6"	6"	6"	6"	6"	6"	6"	-	-	-	-
Size (out)		°	Ø												
		A, L	Ø	-	-	-	-	-	-	6"	6"	6"	6"	6"	6"
		E, U	Ø	-	-	-	-	6"	6"	6"	6"	6"	6"	-	-
		N	Ø	-	6"	6"	6"	6"	6"	6"	6"	-	-	-	-

22 CORRECTION FACTORS

CORRECTIVE FACTORS FOR AVERAGE WATER TEMPERATURES DIFFERENT FROM NOMINAL VALUES

The pressure drops are calculated with an average water temperature of 10 °C (Cooling mode), 43 °C (Heating or recovery mode)

System side heat exchanger																
Cooling mode							Heating mode or recovery									
Average water temperatures	°C	5	10	15	20	30	40	50	23	28	33	38	43	48	53	58
Correction factor		1,02	1,00	0,98	0,97	0,95	0,93	0,91	1,04	1,03	1,02	1,01	1,00	0,99	0,98	0,97

FOULING: DEPOSIT CORRECTIVE FACTORS [K*M²]/[W]

	0,0	0,00005	0,0001	0,0002
Corrective factor of cooling capacity	1,0	1	0.98	0.94
Corrective factor of input power	1,0	1	0.98	0.95

23 GLYCOL

ETHYLENE GLYCOL

Cooling mode

CORRECTION FACTOR WITH ETHYLENE GLYCOL - COOLING MODE											
Freezing point	°C	0	-3,63	-6,10	-8,93	-12,11	-15,74	-19,94	-24,79	-30,44	-37,10
Percent ethylene glycol	%	0	10	15	20	25	30	35	40	45	50
Qwc	–	1,000	1,033	1,040	1,049	1,060	1,072	1,086	1,102	1,120	1,141
Pc	–	1,000	0,990	0,985	0,980	0,975	0,970	0,965	0,960	0,955	0,950
Pa	–	1,000	0,996	0,994	0,992	0,990	0,988	0,986	0,984	0,982	0,980
Δp	–	1,000	1,109	1,157	1,209	1,268	1,336	1,414	1,505	1,609	1,728

Heating mode range

CORRECTION FACTOR WITH ETHYLENE GLYCOL - HEATING MODE											
Freezing Point	°C	0	-3,63	-6,10	-8,93	-12,11	-15,74	-19,94	-24,79	-30,44	-37,10
Percent ethylene glycol	%	0	10	15	20	25	30	35	40	45	50
Qwh	–	1,000	1,027	1,038	1,050	1,063	1,078	1,095	1,114	1,135	1,158
Ph	–	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Pa	–	1,000	1,002	1,003	1,004	1,005	1,007	1,008	1,010	1,012	1,015
Δp	–	1,000	1,087	1,128	1,175	1,227	1,286	1,353	1,428	1,514	1,610

PROPYLENE GLYCOL

Cooling mode

CORRECTION FACTOR WITH PROPYLENE GLYCOL - COOLING MODE											
Freezing Point	°C	0	-3,43	-5,30	-7,44	-9,98	-13,08	-16,86	-21,47	-27,04	-33,72
Percent propylene glycol	%	0	10	15	20	25	30	35	40	45	50
Qwc	–	1,000	1,007	1,006	1,007	1,010	1,015	1,022	1,032	1,044	1,058
Pc	–	1,000	0,985	0,978	0,970	0,963	0,955	0,947	0,939	0,932	0,924
Pa	–	1,000	0,996	0,994	0,992	0,990	0,988	0,986	0,984	0,982	0,980
Δp	–	1,000	1,082	1,102	1,143	1,201	1,271	1,351	1,435	1,520	1,602

Heating mode range

CORRECTION FACTOR WITH PROPYLENE GLYCOL - HEATING MODE											
Freezing Point	°C	0	-3,43	-5,30	-7,44	-9,98	-13,08	-16,86	-21,47	-27,04	-33,72
Percent propylene glycol	%	0	10	15	20	25	30	35	40	45	50
Qwh	–	1,000	1,008	1,014	1,021	1,030	1,042	1,055	1,071	1,090	1,112
Ph	–	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Pa	–	1,000	1,003	1,004	1,005	1,007	1,009	1,011	1,014	1,018	1,023
Δp	–	1,000	1,050	1,077	1,111	1,153	1,202	1,258	1,321	1,390	1,467

- Qwc Corrective factor of flow rates (middle water temperatur 9,5°C)
- Qwh Corrective factor of flow rates (middle water temperatur 42,5°C)
- Pc Corrective factor of cooling Capacity
- Ph Corrective factor of heating Capacity
- Pa Correction factor input Power
- ΔP Correction factor Pressure drop

24 SOUND DATA

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Sound data calculated in cooling mode (1)															
Sound power level	°	dB(A)	96,8	97,0	97,2	97,6	97,8	98,0	98,2	98,4	98,4	99,4	99,5	99,6	100,7
	A	dB(A)	97,3	97,4	97,8	97,9	98,2	98,3	98,4	98,8	98,9	99,0	99,1	99,3	100,1
	E	dB(A)	89,3	89,4	90,2	90,3	90,4	90,8	91,2	91,8	92,0	92,2	92,3	92,8	93,2
	L	dB(A)	88,9	89,0	89,1	89,2	90,3	90,5	90,6	90,8	90,9	91,0	91,1	91,3	92,4
	N	dB(A)	90,0	90,4	90,9	91,0	91,1	91,4	91,4	92,1	92,2	92,3	92,4	92,8	93,3
	U	dB(A)	97,0	97,4	98,0	98,2	98,4	98,8	98,8	99,0	99,1	99,2	99,3	99,9	100,4
Sound pressure level (10 m)	°	dB(A)	64,5	64,7	64,9	65,2	65,4	65,6	65,8	66,0	66,0	66,9	67,0	67,1	68,1
	A	dB(A)	64,9	65,0	65,4	65,5	65,7	65,8	65,9	66,2	66,3	66,4	66,5	66,5	67,2
	E	dB(A)	56,9	57,0	57,7	57,8	57,9	58,2	58,6	59,0	59,2	59,4	59,5	59,9	60,2
	L	dB(A)	56,5	56,6	56,7	56,8	57,8	58,0	58,1	58,2	58,3	58,4	58,5	58,5	59,5
	N	dB(A)	57,5	57,9	58,3	58,4	58,5	58,6	58,6	59,2	59,3	59,4	59,5	59,8	60,1
	U	dB(A)	64,6	65,0	65,5	65,7	65,9	66,2	66,2	66,2	66,3	66,4	66,5	67,0	67,4
Sound pressure level (1 m)	°	dB(A)	77,0	77,2	77,4	77,2	77,4	77,6	77,8	78,0	78,0	78,5	78,6	78,7	79,5
	A	dB(A)	76,9	77,0	77,4	77,5	77,3	77,4	77,5	77,6	77,7	77,8	77,9	77,7	78,1
	E	dB(A)	68,9	69,0	69,3	69,4	69,5	69,6	70,0	70,2	70,4	70,6	70,7	70,8	71,0
	L	dB(A)	68,5	68,6	68,7	68,8	69,4	69,6	69,7	69,6	69,7	69,8	69,9	69,7	70,4
	N	dB(A)	69,1	69,5	69,7	69,8	69,9	69,8	69,8	70,1	70,2	70,3	70,4	70,5	70,4
	U	dB(A)	76,6	77,0	77,1	77,3	77,5	77,6	77,4	77,5	77,6	77,7	77,9	78,0	78,1
Sound power by centre octave band dB(A)															
125 Hz	°	dB(A)	77,5	77,7	77,9	78,2	78,4	78,5	78,7	78,9	78,9	79,7	79,8	79,9	80,8
	A	dB(A)	77,9	78,0	78,4	78,5	78,7	78,8	78,9	79,2	79,3	79,4	79,5	79,7	80,3
	E	dB(A)	67,1	67,2	67,8	67,9	68,0	68,3	68,6	69,1	69,3	69,4	69,5	69,9	70,2
	L	dB(A)	66,8	66,9	67,0	67,0	67,9	68,1	68,2	68,3	68,4	68,5	68,6	68,7	69,6
	N	dB(A)	67,7	68,0	68,4	68,5	68,6	68,8	68,8	69,4	69,4	69,5	69,6	69,9	70,3
	U	dB(A)	77,7	78,0	78,5	78,7	78,9	79,2	79,2	79,4	79,5	79,6	79,7	80,2	80,6
250 Hz	°	dB(A)	82,6	82,8	83,0	83,3	83,5	83,7	83,9	84,1	84,1	85,0	85,1	85,2	86,2
	A	dB(A)	83,1	83,2	83,5	83,6	83,9	84,0	84,1	84,4	84,5	84,6	84,7	84,9	85,6
	E	dB(A)	78,0	78,1	78,8	78,9	79,0	79,4	79,8	80,3	80,5	80,7	80,8	81,2	81,6
	L	dB(A)	77,6	77,7	77,8	77,9	78,9	79,1	79,2	79,4	79,5	79,6	79,7	79,8	80,9
	N	dB(A)	78,6	79,0	79,5	79,6	79,7	79,9	79,9	80,6	80,7	80,8	80,9	81,2	81,7
	U	dB(A)	82,8	83,2	83,7	83,9	84,1	84,4	84,4	84,6	84,7	84,8	84,9	85,4	85,9
500 Hz	°	dB(A)	89,0	89,2	89,4	89,8	90,0	90,2	90,4	90,6	90,6	91,6	91,7	91,8	92,8
	A	dB(A)	89,5	89,6	90,0	90,1	90,4	90,5	90,6	91,0	91,1	91,2	91,3	91,5	92,3
	E	dB(A)	84,9	85,0	85,8	85,9	86,0	86,4	86,8	87,4	87,6	87,8	87,9	88,4	88,8
	L	dB(A)	84,4	84,5	84,6	84,8	85,9	86,1	86,2	86,4	86,5	86,6	86,7	86,9	88,0
	N	dB(A)	85,6	86,0	86,5	86,6	86,7	87,0	87,0	87,7	87,8	87,9	88,0	88,4	88,9
	U	dB(A)	89,2	89,6	90,2	90,4	90,6	91,0	91,0	91,2	91,3	91,4	91,5	92,1	92,6
1000 Hz	°	dB(A)	92,8	93,0	93,2	93,6	93,8	94,0	94,2	94,4	94,4	95,5	95,6	95,7	96,8
	A	dB(A)	93,3	93,4	93,8	93,9	94,2	94,3	94,4	94,8	94,9	95,0	95,1	95,3	96,2
	E	dB(A)	85,6	85,7	86,5	86,6	86,7	87,1	87,5	88,2	88,4	88,6	88,7	89,2	89,6
	L	dB(A)	85,2	85,3	85,4	85,5	86,6	86,8	86,9	87,1	87,2	87,3	87,4	87,6	88,8
	N	dB(A)	86,3	86,7	87,2	87,3	87,4	87,7	87,7	88,5	88,6	88,7	88,8	89,2	89,7
	U	dB(A)	93,0	93,4	94,0	94,2	94,4	94,8	94,8	95,0	95,1	95,2	95,3	96,0	96,5
2000 Hz	°	dB(A)	91,7	91,9	92,1	92,5	92,7	92,9	93,1	93,3	93,3	94,3	94,4	94,5	95,6
	A	dB(A)	92,2	92,3	92,7	92,8	93,1	93,2	93,3	93,7	93,8	93,9	94,0	94,2	95,0
	E	dB(A)	80,1	80,2	81,0	81,1	81,2	81,5	81,9	82,5	82,7	82,9	83,0	83,5	83,8
	L	dB(A)	79,7	79,8	79,9	80,0	81,1	81,3	81,4	81,5	81,6	81,7	81,8	82,0	83,1
	N	dB(A)	80,8	81,2	81,6	81,7	81,8	82,1	82,1	82,8	82,9	83,0	83,1	83,5	83,9
	U	dB(A)	91,9	92,3	92,9	93,1	93,3	93,7	93,7	93,9	94,0	94,1	94,2	94,8	95,3
4000 Hz	°	dB(A)	85,3	85,5	85,7	86,0	86,2	86,4	86,6	86,8	86,8	87,7	87,8	87,9	89,0
	A	dB(A)	85,8	85,9	86,2	86,3	86,6	86,7	86,8	87,2	87,3	87,4	87,5	87,6	88,4
	E	dB(A)	70,2	70,3	71,0	71,1	71,2	71,5	71,8	72,3	72,5	72,7	72,8	73,2	73,5
	L	dB(A)	69,9	70,0	70,1	70,2	71,1	71,2	71,3	71,5	71,6	71,7	71,7	71,9	72,8
	N	dB(A)	70,8	71,2	71,6	71,7	71,7	72,0	72,0	72,6	72,7	72,8	72,8	73,2	73,6
	U	dB(A)	85,5	85,9	86,4	86,6	86,8	87,2	87,2	87,4	87,5	87,5	87,6	88,2	88,7
8000 Hz	°	dB(A)	74,8	75,0	75,2	75,5	75,7	75,8	76,0	76,1	76,1	77,0	77,1	77,1	78,0
	A	dB(A)	75,2	75,3	75,7	75,7	76,0	76,1	76,1	76,5	76,6	76,6	76,7	76,9	77,6
	E	dB(A)	59,8	59,9	60,5	60,5	60,6	60,9	61,2	61,6	61,8	61,9	62,0	62,3	62,6
	L	dB(A)	59,5	59,6	59,7	59,8	60,5	60,7	60,8	60,9	61,0	61,0	61,1	61,3	62,0
	N	dB(A)	60,3	60,6	61,0	61,0	61,1	61,3	61,3	61,8	61,9	62,0	62,0	62,3	62,7
	U	dB(A)	75,0	75,3	75,8	76,0	76,1	76,5	76,5	76,6	76,7	76,8	76,9	77,4	77,8

(1) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification. Sound pressure (cold functioning) measured in free field, 10m away from the unit external surface (in compliance with UNI EN ISO 3744).

Data 14511:2018
System water temperature 12/7 °C (in/out)
Outside air temperature 35 °C
Standard fans
Note
For operating conditions different to those declared refer to the selection program Magellano, available on www.aermec.com

Size			4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Sound data calculated in cooling mode (1)															
Sound power level	°	dB(A)	100,8	101,2	101,3	101,7	101,7	101,8	102,1	102,3	102,4	103,0	103,1	103,2	103,3
	A	dB(A)	100,2	100,4	100,8	101,5	101,7	101,9	102,0	102,0	102,1	102,3	102,4	103,3	104,4
	E	dB(A)	93,5	93,6	93,7	93,8	93,9	94,0	94,2	94,3	94,3	94,4	94,8	-	-
	L	dB(A)	92,5	93,0	93,1	93,2	93,7	93,9	94,0	94,2	94,2	94,3	94,3	94,4	95,0
	N	dB(A)	93,4	94,3	94,4	94,8	95,0	95,2	95,3	95,4	-	-	-	-	-
	U	dB(A)	100,7	101,0	101,3	101,6	102,0	102,1	102,2	102,2	102,3	102,4	102,4	-	-
Sound pressure level (10 m)	°	dB(A)	68,2	68,4	68,5	68,8	68,8	68,9	69,1	69,3	69,4	69,9	69,9	70,0	70,1
	A	dB(A)	67,3	67,4	67,8	68,5	68,6	68,7	68,8	68,6	68,7	68,7	68,8	69,6	70,5
	E	dB(A)	60,4	60,5	60,5	60,6	60,5	60,5	60,6	60,7	60,6	60,7	61,0	-	-
	L	dB(A)	59,6	60,0	60,1	60,2	60,6	60,7	60,8	60,8	60,8	60,7	60,7	60,7	61,1
	N	dB(A)	60,2	60,8	60,8	61,1	61,2	61,4	61,5	61,5	-	-	-	-	-
	U	dB(A)	67,6	67,9	68,1	68,4	68,6	68,6	68,6	68,6	68,6	68,7	68,6	-	-
Sound pressure level (1 m)	°	dB(A)	79,6	79,6	79,7	79,7	79,7	79,8	79,8	79,9	80,0	80,4	80,2	80,3	80,4
	A	dB(A)	78,2	78,1	78,5	79,2	79,1	79,0	79,1	78,8	78,9	78,6	78,7	79,3	80,0
	E	dB(A)	70,9	71,0	70,8	70,9	70,7	70,5	70,5	70,6	70,3	70,4	70,6	-	-
	L	dB(A)	70,5	70,7	70,8	70,9	71,1	71,0	71,1	71,0	71,0	70,6	70,6	70,4	70,6
	N	dB(A)	70,5	70,8	70,7	70,8	70,8	71,0	71,1	71,0	-	-	-	-	-
	U	dB(A)	78,1	78,4	78,4	78,7	78,8	78,6	78,5	78,5	78,3	78,4	78,2	-	-
Sound power by centre octave band dB(A)															
125 Hz	°	dB(A)	80,9	81,3	81,4	81,7	81,7	81,8	82,0	82,2	82,3	82,8	82,9	83,0	83,1
	A	dB(A)	80,4	80,6	80,9	81,5	81,7	82,0	82,0	81,9	82,0	82,2	82,3	83,1	84,0
	E	dB(A)	70,5	70,6	70,6	70,7	70,8	70,9	71,0	71,1	71,1	71,2	71,5	-	-
	L	dB(A)	69,7	70,1	70,2	70,2	70,6	70,8	70,9	71,0	71,0	71,1	71,1	71,2	71,7
	N	dB(A)	70,4	71,1	71,2	71,5	71,7	71,8	71,9	72,0	-	-	-	-	-
	U	dB(A)	80,8	81,1	81,4	81,6	82,0	82,0	82,1	82,2	82,3	82,3	-	-	-
250 Hz	°	dB(A)	86,3	86,6	86,7	87,1	87,1	87,2	87,4	87,6	87,7	88,3	88,3	88,4	88,5
	A	dB(A)	85,7	85,9	86,3	86,9	87,1	87,3	87,3	87,3	87,4	87,6	87,7	88,5	89,5
	E	dB(A)	81,9	82,0	82,1	82,2	82,3	82,4	82,5	82,6	82,6	82,7	83,1	-	-
	L	dB(A)	81,0	81,4	81,5	81,6	82,1	82,3	82,4	82,5	82,5	82,6	82,6	82,7	83,3
	N	dB(A)	81,8	82,6	82,7	83,1	83,3	83,5	83,6	83,7	-	-	-	-	-
	U	dB(A)	86,2	86,4	86,7	87,0	87,3	87,4	87,5	87,5	87,6	87,7	87,7	-	-
500 Hz	°	dB(A)	92,9	93,3	93,4	93,8	93,8	93,9	94,2	94,4	94,5	95,1	95,2	95,3	95,4
	A	dB(A)	92,4	92,6	92,9	93,6	93,8	94,1	94,1	94,0	94,2	94,4	94,5	95,4	96,5
	E	dB(A)	89,1	89,2	89,3	89,4	89,5	89,6	89,8	89,9	89,9	90,0	90,4	-	-
	L	dB(A)	88,1	88,6	88,7	88,8	89,3	89,5	89,6	89,8	89,8	89,9	89,9	90,0	90,6
	N	dB(A)	89,0	89,9	90,0	90,4	90,6	90,8	90,9	91,0	-	-	-	-	-
	U	dB(A)	92,8	93,1	93,4	93,7	94,1	94,2	94,3	94,3	94,4	94,5	94,5	-	-
1000 Hz	°	dB(A)	96,9	97,3	97,4	97,8	97,8	97,9	98,2	98,4	98,5	99,1	99,2	99,3	99,4
	A	dB(A)	96,3	96,5	96,9	97,6	97,8	98,1	98,1	98,0	98,2	98,4	98,5	99,4	100,6
	E	dB(A)	89,9	90,0	90,1	90,2	90,3	90,4	90,6	90,7	90,7	90,8	91,2	-	-
	L	dB(A)	88,9	89,4	89,5	89,6	90,1	90,3	90,4	90,6	90,6	90,7	90,7	90,8	91,4
	N	dB(A)	89,8	90,7	90,8	91,2	91,4	91,6	91,7	91,8	-	-	-	-	-
	U	dB(A)	96,8	97,1	97,4	97,7	98,1	98,2	98,3	98,3	98,4	98,5	98,5	-	-
2000 Hz	°	dB(A)	95,7	96,2	96,3	96,7	96,7	96,8	97,1	97,3	97,4	98,0	98,1	98,2	98,3
	A	dB(A)	95,1	95,3	95,7	96,5	96,7	97,0	97,0	96,9	97,1	97,3	97,4	98,3	99,4
	E	dB(A)	84,1	84,2	84,3	84,4	84,5	84,6	84,8	84,9	84,9	85,0	85,4	-	-
	L	dB(A)	83,2	83,6	83,7	83,8	84,3	84,5	84,6	84,8	84,8	84,9	84,9	85,0	85,6
	N	dB(A)	84,0	84,9	85,0	85,4	85,6	85,7	85,8	85,9	-	-	-	-	-
	U	dB(A)	95,6	96,0	96,3	96,6	97,0	97,1	97,2	97,2	97,3	97,4	97,4	-	-
4000 Hz	°	dB(A)	89,1	89,4	89,5	89,9	89,9	90,0	90,3	90,5	90,6	91,1	91,2	91,3	91,4
	A	dB(A)	88,5	88,7	89,1	89,7	89,9	90,2	90,2	90,1	90,3	90,5	90,6	91,4	92,4
	E	dB(A)	73,8	73,8	73,9	74,0	74,1	74,2	74,3	74,4	74,4	74,5	74,8	-	-
	L	dB(A)	72,9	73,3	73,4	73,5	73,9	74,1	74,2	74,3	74,3	74,4	74,4	74,5	75,0
	N	dB(A)	73,7	74,4	74,5	74,8	75,0	75,2	75,3	75,3	-	-	-	-	-
	U	dB(A)	89,0	89,2	89,5	89,8	90,2	90,3	90,4	90,4	90,5	90,6	90,6	-	-
8000 Hz	°	dB(A)	78,1	78,5	78,5	78,9	78,9	79,0	79,2	79,4	79,4	79,9	80,0	80,1	80,2
	A	dB(A)	77,6	77,8	78,1	78,7	78,9	79,1	79,1	79,0	79,2	79,4	79,4	80,2	81,1
	E	dB(A)	62,8	62,9	63,0	63,0	63,1	63,2	63,3	63,4	63,4	63,5	63,8	-	-
	L	dB(A)	62,1	62,5	62,5	62,6	63,0	63,1	63,2	63,3	63,3	63,4	63,4	63,5	63,9
	N	dB(A)	62,8	63,4	63,5	63,8	63,9	64,0	64,1	64,2	-	-	-	-	-
	U	dB(A)	78,0	78,3	78,5	78,8	79,1	79,2	79,3	79,3	79,4	79,4	79,4	-	-

(1) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification. Sound pressure (cold functioning) measured in free field, 10m away from the unit external surface (in compliance with UNI EN ISO 3744).

Data 14511:2018
System water temperature 12/7 °C (in/out)
Outside air temperature 35 °C
Standard fans
Note
For operating conditions different to those declared refer to the selection program Magellano, available on www.aermec.com

25 SOUND DATA WITH ACOUSTIC KIT

Size		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902
Sound data calculated in cooling mode with Acoustic kit (1)															
Sound power level	°A,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-	-
	E	dB(A)	84,3	84,4	85,2	85,3	85,4	85,8	86,2	86,8	87,0	88,2	87,3	88,8	88,0
	L	dB(A)	83,9	84,0	84,1	84,2	85,3	85,5	85,6	85,8	85,9	87,0	86,1	87,3	86,4
	N	dB(A)	85,0	85,4	85,9	86,0	86,1	86,4	86,4	87,1	87,2	88,3	87,4	88,8	88,1
Sound pressure level (10 m)	°A,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-	-
	E	dB(A)	53,5	53,6	54,4	54,5	54,6	55,0	55,4	56,0	56,2	57,4	56,5	58,0	57,2
	L	dB(A)	53,1	53,2	53,3	53,4	54,5	54,7	54,8	55,0	55,1	56,2	55,3	56,5	55,6
	N	dB(A)	54,2	54,6	55,1	55,2	55,3	55,6	55,6	56,3	56,4	57,5	56,6	58,0	57,3
Sound pressure level (1 m)	°A,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-	-
	E	dB(A)	73,5	73,6	74,4	74,5	74,6	75,0	75,4	76,0	76,2	77,4	76,5	78,0	77,2
	L	dB(A)	73,1	73,2	73,3	73,4	74,5	74,7	74,8	75,0	75,1	76,2	75,3	76,5	75,6
	N	dB(A)	74,2	74,6	75,1	75,2	75,3	75,6	75,6	76,3	76,4	77,5	76,6	78,0	77,3
Sound power by centre octave band dB(A)															
125 Hz	°A,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-	-
	E	dB(A)	67,1	67,2	67,8	67,9	68,0	68,3	68,6	69,1	69,3	69,4	69,5	69,9	70,1
	L	dB(A)	66,8	66,9	67,0	67,0	67,9	68,1	68,2	68,3	68,4	68,5	68,6	68,7	68,8
	N	dB(A)	67,7	68,0	68,4	68,5	68,6	68,8	68,8	69,4	69,4	69,5	69,6	69,9	70,2
250 Hz	°A,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-	-
	E	dB(A)	78,0	78,1	78,8	78,9	79,0	79,4	79,8	80,3	80,5	80,7	80,8	81,2	81,4
	L	dB(A)	77,6	77,7	77,8	77,9	78,9	79,1	79,2	79,4	79,5	79,6	79,7	79,8	79,9
	N	dB(A)	78,6	79,0	79,5	79,6	79,7	79,9	79,9	80,6	80,7	80,8	80,9	81,2	81,5
500 Hz	°A,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-	-
	E	dB(A)	78,1	78,2	79,0	79,1	79,2	79,6	80,1	80,7	80,9	82,4	81,2	83,0	81,9
	L	dB(A)	77,7	77,8	77,9	78,0	79,1	79,3	79,4	79,6	79,7	81,2	80,0	81,5	80,3
	N	dB(A)	78,8	79,2	79,7	79,8	80,0	80,3	80,3	81,0	81,1	82,5	81,3	83,0	82,0
1000 Hz	°A,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-	-
	E	dB(A)	79,4	79,5	80,3	80,4	80,5	81,0	81,4	82,0	82,2	83,8	82,5	84,4	83,3
	L	dB(A)	79,0	79,1	79,2	79,3	80,4	80,6	80,7	81,0	81,1	82,5	81,3	82,8	81,6
	N	dB(A)	80,1	80,5	81,1	81,2	81,3	81,6	81,6	82,3	82,4	83,9	82,6	84,4	83,4
2000 Hz	°A,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-	-
	E	dB(A)	75,9	76,0	76,8	76,9	77,0	77,4	77,8	78,4	78,6	80,1	78,9	80,7	79,6
	L	dB(A)	75,5	75,6	75,7	75,8	76,9	77,1	77,2	77,4	77,5	78,9	77,7	79,2	78,0
	N	dB(A)	76,6	77,0	77,5	77,6	77,7	78,0	78,0	78,7	78,8	80,2	79,0	80,7	79,7
4000 Hz	°A,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-	-
	E	dB(A)	70,2	70,3	71,0	71,1	71,2	71,5	71,8	72,3	72,5	72,7	72,8	73,2	73,3
	L	dB(A)	69,9	70,0	70,1	70,2	71,1	71,2	71,3	71,5	71,6	71,7	71,7	71,9	72,0
	N	dB(A)	70,8	71,2	71,6	71,7	71,7	72,0	72,0	72,6	72,7	72,8	72,8	73,2	73,4
8000 Hz	°A,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-	-
	E	dB(A)	59,8	59,9	60,5	60,5	60,6	60,9	61,2	61,6	61,8	61,9	62,0	62,3	62,5
	L	dB(A)	59,5	59,6	59,7	59,8	60,5	60,7	60,8	60,9	61,0	61,0	61,1	61,3	61,3
	N	dB(A)	60,3	60,6	61,0	61,0	61,1	61,3	61,3	61,8	61,9	62,0	62,0	62,3	62,5

(1) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification. Sound pressure (cold functioning) measured in free field, 10m away from the unit external surface (in compliance with UNI EN ISO 3744).

Data 14511:2018

System water temperature 12/7 °C (in/out)

Outside air temperature 35 °C

Standard fans

Note

For operating conditions different to those declared refer to the selection program Magellano, available on www.aermec.com

Size		4202	4502	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
Sound data calculated in cooling mode with Acoustic kit (1)														
Sound power level	°A,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-
	E	dB(A)	89,5	89,6	89,7	90,8	90,9	91,0	91,2	90,3	90,3	92,4	92,8	-
	L	dB(A)	88,5	89,0	89,1	90,2	90,7	90,9	91,0	90,2	90,2	92,3	92,3	92,4
	N	dB(A)	89,4	90,3	90,4	91,8	92,0	92,2	92,3	91,4	-	-	-	-
Sound pressure level (10 m)	°A,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-
	E	dB(A)	58,7	58,8	58,9	60,0	60,1	60,2	60,4	59,5	59,5	61,6	62,0	-
	L	dB(A)	57,7	58,2	58,3	59,4	59,9	60,1	60,2	59,4	59,4	61,5	61,5	61,6
	N	dB(A)	58,6	59,5	59,6	61,0	61,2	61,4	61,5	60,6	-	-	-	-
Sound pressure level (1 m)	°A,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-
	E	dB(A)	78,7	78,8	78,9	80,0	80,1	80,2	80,4	79,5	79,5	81,6	82,0	-
	L	dB(A)	77,7	78,2	78,3	79,4	79,9	80,1	80,2	79,4	79,4	81,5	81,5	81,6
	N	dB(A)	78,6	79,5	79,6	81,0	81,2	81,4	81,5	80,6	-	-	-	-
Sound power by centre octave band dB(A)														
125 Hz	°A,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-
	E	dB(A)	70,5	70,6	70,6	70,7	70,8	70,9	71,0	71,1	71,1	71,2	71,5	-
	L	dB(A)	69,7	70,1	70,2	70,2	70,6	70,8	70,9	71,0	71,0	71,1	71,1	71,2
	N	dB(A)	70,4	71,1	71,2	71,5	71,7	71,8	71,9	72,0	-	-	-	-
250 Hz	°A,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-
	E	dB(A)	81,9	82,0	82,1	82,2	82,3	82,4	82,5	82,6	82,6	82,7	83,1	-
	L	dB(A)	81,0	81,4	81,5	81,6	82,1	82,3	82,4	82,5	82,5	82,6	82,6	82,7
	N	dB(A)	81,8	82,6	82,7	83,1	83,3	83,5	83,6	83,7	-	-	-	-
500 Hz	°A,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-
	E	dB(A)	83,7	83,8	84,0	85,3	85,4	85,5	85,7	84,6	84,6	87,1	87,5	-
	L	dB(A)	82,7	83,2	83,3	84,7	85,2	85,4	85,5	84,5	84,5	87,0	87,0	87,1
	N	dB(A)	83,6	84,6	84,7	86,3	86,5	86,7	86,8	85,7	-	-	-	-
1000 Hz	°A,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-
	E	dB(A)	85,1	85,2	85,3	86,7	86,8	86,9	87,1	86,0	86,0	88,5	88,9	-
	L	dB(A)	84,1	84,6	84,7	86,1	86,6	86,8	86,9	85,9	85,9	88,4	88,4	88,5
	N	dB(A)	85,0	86,0	86,1	87,7	87,9	88,1	88,2	87,1	-	-	-	-
2000 Hz	°A,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-
	E	dB(A)	81,4	81,5	81,6	82,9	83,0	83,1	83,3	82,2	82,2	84,6	85,0	-
	L	dB(A)	80,4	80,9	81,0	82,3	82,8	83,0	83,1	82,1	82,1	84,5	84,5	84,6
	N	dB(A)	81,3	82,2	82,3	83,9	84,1	84,3	84,4	83,3	-	-	-	-
4000 Hz	°A,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-
	E	dB(A)	73,8	73,8	73,9	74,0	74,1	74,2	74,3	74,4	74,4	74,5	74,8	-
	L	dB(A)	72,9	73,3	73,4	73,5	73,9	74,1	74,2	74,3	74,3	74,4	74,4	74,5
	N	dB(A)	73,7	74,4	74,5	74,8	75,0	75,2	75,3	75,3	-	-	-	-
8000 Hz	°A,U	dB(A)	-	-	-	-	-	-	-	-	-	-	-	-
	E	dB(A)	62,8	62,9	63,0	63,0	63,1	63,2	63,3	63,4	63,4	63,5	63,8	-
	L	dB(A)	62,1	62,5	62,5	62,6	63,0	63,1	63,2	63,3	63,3	63,4	63,4	63,5
	N	dB(A)	62,8	63,4	63,5	63,8	63,9	64,0	64,1	64,2	-	-	-	-

(1) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification. Sound pressure (cold functioning) measured in free field, 10m away from the unit external surface (in compliance with UNI EN ISO 3744).

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Standard fans

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