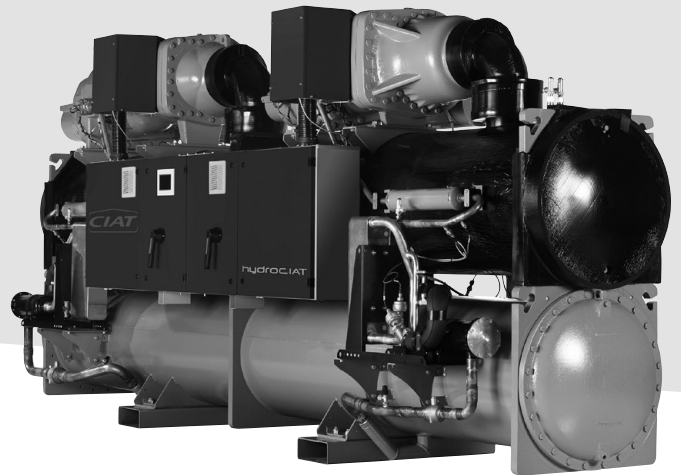




## HYDROCIAT LW

Water chillers  
Heat pump



### *Energy excellence*

*Compact and reliable*

*Screw compressors*

*Flooded shell and tubes evaporator*

*Self-adjusting electronic control*

*Touch screen control interface*

*Cooling capacity 273-1756 kW  
Heating capacity 317-1989 kW*



Cooling



Heating



Heat  
recovery

HFC  
R-134A 



## USE

The latest generation of **HYDROCIAT LW** water chillers and water-to-water heat pumps are the perfect solution for all heating and cooling applications in the Office, Healthcare, Industry, Administration, Shopping Centres and Collective Housing markets.

HYDROCIAT is optimised to use ozone-friendly HFC R134a refrigerant.

This range guarantees compliance with the most demanding requirements for high energy efficiency and CO<sub>2</sub> reduction to comply with the various applicable European directives and regulations.

When producing chilled water, these units can be connected to a drycooler or a water cooling tower.

With the heat pump option, the units can produce hot water for heating applications. They can also be used in cooling mode by reversing the cycle on the hydraulic circuits using a set of valves (hydraulic valves not supplied).

## RANGE

### **HYDROCIAT LW ST series**

Standard cooling or heating version

The product is optimised to meet the most demanding technical and economic requirements.

### **HYDROCIAT LW HE series**

High Efficiency cooling or heating version

The product is optimised for high energy efficiency applications for which optimum SEER, SEPR and SCOP values are required, ensuring operating costs are kept to a minimum.

## DESCRIPTION

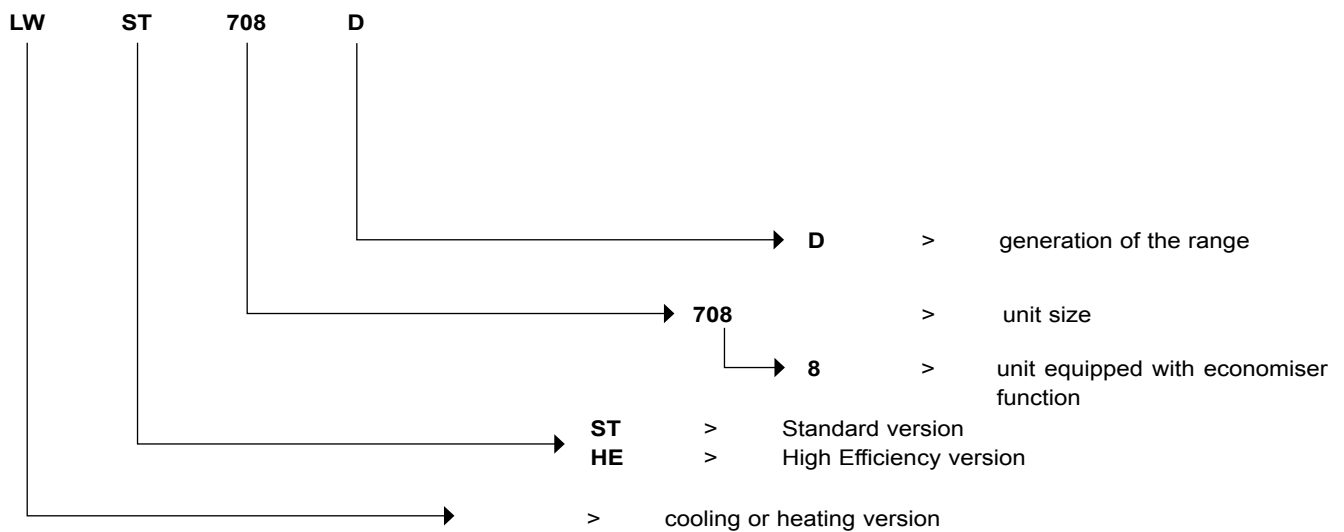
HYDROCIAT units are packaged machines supplied as standard with the following components:

- Twin-screw semi-hermetic compressors
- Shell and tube type chilled-water evaporator
- Shell and tube type hot water condenser
- Electrical power and remote control cabinet:
  - 400 V-3ph-50 Hz general power supply (+/-10%) + Earth
  - transformer fitted as standard on the machine for supplying the remote control circuit with 24 V
- Connect Touch electronic control module
- Casing for indoor installation

The entire HYDROCIAT range complies with the following EC directives and standards:

- Machinery Directive 2006/42/EC
- Electromagnetic Compatibility Directive 2014/30/EU
- EMC immunity and emissions EN 61800-3 'C3'
- Low Voltage Directive 2014/35/EU
- RoHS 2011/65/EU
- Pressure Equipment Directive (PED) 2014/68/EU
- Machinery Directive EN 60-204 -1
- Refrigeration systems and heat pumps EN 378-2.
- Regulation (EU) 2016/2281 implementing Directive 2009/125/EC with regard to ecodesign requirements

## DESIGNATION



## CONFIGURATION

<b>ST</b>	Standard	<b>HE</b>	High Efficiency
<b>ST LN option</b>	Standard Low Noise	<b>HE LN option</b>	High Efficiency Low Noise

## DESCRIPTION OF THE COMPONENTS

### ■ Compressors

- Twin-screw semi-hermetic type
- 2 screws fitted on ball and roller bearings
- Continuous power control
- Built-in electric motor, cooled by intake gases
- Integral electronic protection of the motor against thermal and electrical overloads
- Monitoring of rotation direction, absence of phase, over and under voltage, and power supply failure
- Monitoring of lubrication under differential pressure
- Built-in oil filter
- Internal pressure surge valve and valve to prevent reverse rotation during shutdown phases
- Monitoring of maximum head pressure
- Silencer fitted at the discharge to reduce pulses from the discharged gas
- Star-delta start limiting the in-rush current

### ■ Shell and tube evaporator

- High performance glandless technology
- Copper tube bundle with internal and external grooves
- 19 mm thermal insulation
- Victaulic type coupling
- Maximum pressure, water side, of 10 bar (21 bar as option)

### ■ Shell and tube condenser

- Copper tube bundle with internal and external grooves
- 19 mm thermal insulation (option)
- Built-in oil separator
- Victaulic type coupling
- Maximum pressure, water side, of 10 bar (21 bar as option)

### ■ Economiser function (available on models designated by the figure 8)

- 1 brazed plate heat exchanger on each refrigerating circuit
- Refrigerant flow rate controlled by an electronic expansion valve
- The economiser function allows the cooling capacity to be significantly increased and provides considerable optimisation of the machine's energy efficiency

### ■ Refrigerant accessories

- Dehumidifier filters with rechargeable cartridges
- Hygroscopic sight glasses
- Electronic expansion valves

### ■ Regulation and safety instruments

- High and low pressure sensors
- Safety relief valves on refrigerating circuit
- Evaporator antifreeze protection sensor
- Chilled water and hot water control sensors
- Electronic evaporator water circulation controller

### ■ Electrical cabinet

- Electrical cabinet index of protection IP23
- Safety disconnect switch
- 24 V control circuit
- Remote control transformer circuit
- Protection of the power and control circuits

- Compressor motor contactor
- Connect Touch microprocessor-controlled electronic control module
- Electrical cabinet wire numbers
- Location of main components

### ■ Connect Touch control module

- User interface with 4.3 inch touchscreen (7-inch option)
- Intuitive, user-friendly navigation using icons
- Clear information display in 8 languages
- (F-GB-E-NL-I-S-P + Chinese)



- The electronic control module performs the following main functions:

- regulation of the chilled water temperature (at the return or at the outlet)
  - regulation of the water temperature based on the outdoor temperature (water law)
  - regulation for low temperature energy storage
  - second setpoint management
  - complete management of compressors with start-up sequence, timer and operating time balancing
  - self-regulating and proactive functions with adjustment of settings on drift control
  - continuous power control slide system on the compressors according to the thermal requirements
  - management of compressor short cycle protection
  - phase reversal protection
  - management of occupied/unoccupied modes (according to the time schedule)
  - equalisation of compressor operating hours
  - condensing temperature limitation (option)
  - diagnosis of fault and operating statuses
  - management of a fault memory allowing a log of the last 50 incidents to be accessed, with operating readings taken when the fault occurs
  - blackbox memory
  - master/slave management of two machines with equalisation of operating hours and automatic switching
  - in case of a machine fault
  - weekly and hourly time schedule for the machine, including 16 periods of absence
  - display of all machine parameters (3 access levels, User/Maintenance/Factory, password-protected): temperature, setpoints, pressures, flow rate, operation time.
  - display of trend curves for the main values
  - storage of maintenance manual, wiring diagram and spare parts list.
- ### ■ Unit construction
- Electrical cabinet in graphite grey (RAL 7024)
  - Compressors in grey (RAL 7037)

## DESCRIPTION OF THE COMPONENTS

### ■ Remote management

Connect Touch is equipped as standard with an RS485 port and an ETHERNET (IP) connection, offering a range of options for remote management, monitoring and diagnostics.

Using the integrated Webserver, a simple internet connection uses the unit's IP address to access the Connect Touch interface on the PC, facilitating everyday management tasks and maintenance operations.

Numerous communication protocols are available: MODBUS/JBUS RTU(RS485) or TC/IP as standard, LONWORKS – BACNET IP optional, enabling integration with most CMS/BMS

Several contacts are available as standard, enabling the machine to be controlled remotely by wired link:

- automatic operation control: when this contact is open, the machine stops
- setpoint 1/setpoint 2 selector: when this contact is closed, a second cooling setpoint is activated (energy storage or unoccupied mode, for example)
- heating/cooling operating mode selection
- power limitation: closing the contact concerned allows the power or refrigerating consumption of the machine to be limited by stopping one or more compressors (this limit can be set with a parameter)
- fault reporting: this contact indicates the presence of a major fault which has caused one or both refrigerating circuits to stop
- operational status reporting indicates that the unit is in production mode
- 0-10V signal output for external variable speed pump management

Contacts available as an option:

- setpoint adjustable via 4-20 mA signal: this input is used to adjust the setpoint in COOLING mode
- power limitation adjustable by 4-20 mA signal
- second power limitation level
- power indication: analogue output (0-10 V) providing an indication of the unit's load rate.
- user fault reporting enables integration of a fault in the water loop
- general fault reporting: this contact indicates that the unit has stopped completely
- alert reporting: this contact indicates the presence of a minor fault which has not caused the circuit affected to stop.
- end of storage signal: enables return to the second setpoint at the end of the storage cycle

### ■ Maintenance alert as standard

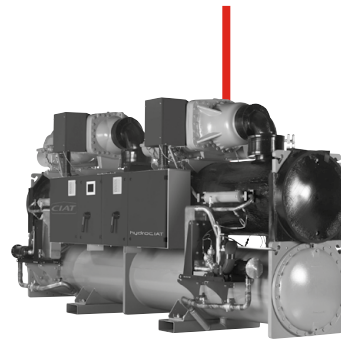
Connect Touch has two maintenance reminder functions as standard, making users aware of the need to regularly perform maintenance operations and to guarantee the service life and performance of the unit. These two functions can be activated independently.

A reminder message appears on the unit's HMI screen, and stays there until it is acknowledged by the maintenance operator. The information and alert relating to these functions are available on the communication bus to be used on the CMS/BMS.

- schedule override: closing this contact cancels the time schedule.
- drycooler management

Direct access to technical literature

- Instruction manual
- Electrical diagram
- Spare parts list



Web server integrate as standard

IP address



Remote management via web server

- Connection to RJ port
- Connection via IP address
- All the HMI functionalities available on the PC
- Simplified remote monitoring



E-mail alerts  
(2 addresses)

- the scheduled maintenance reminder: when activated, this function enables the period between two maintenance inspections to be set. This period may be set by the operator in either days, months or operating hours, depending on the application.
- the compulsory F-GAS sealing test maintenance reminder: when activated, this function, which is the default factory setting, enables the period between two sealing tests to be selected, according to the refrigerant charge, in compliance with the F-GAS regulations.

## OPTIONS

Options	Description	Advantages	LW ST/HE
Low Brine with turbulators down to -15°C	Redesigned evaporator including turbulators to allow chilled brine solution production with low pressure drops on the entire negative application range, down to -15°C (including turbulators, extra insulation and algorithms).	Covers specific applications such as ice storage and industrial processes	Only LW ST
Light-brine solution, down to -3°C	Implementation of new control algorithms and redesigned evaporator to allow chilled brine solution production down to -3°C when ethylene glycol is used (0°C with propylene glycol)	Matches with most application requirements for ground-sourced heat pumps and fits with many industrial processes requirements	•
90-10 Copper-Nickel condensers	- Condenser tubes 90-10 Cu/Ni. - Condenser tube sheets clad with 90-10 Cu/Ni. - Waterboxes not treated against corrosion.	Improved resistance to corrosion	•
IP44 electrical protection level	Control box tightness reinforced Electrical box enclosure and outside electrical component following IEC 60529 standard	Permits unit installation in more severe environments	•
Unit supplied in two assembled parts	The unit is equipped with flanges that allow disassembly of the unit on site	Facilitates installation in plant rooms with limited access	Only sizes: 4228/4408/4608/4628
Evap. single pump power/control circuit	Unit equipped with an electrical power and control circuit for one pump evaporator side	Quick and easy installation: the control of fixed speed pumps is embedded in the unit control	708-3428
230V electrical plug	230V AC power supply source provided with plug socket and transformer (180 VA, 0,8 Amps)	Permits connection of a laptop or an electrical device during unit commissioning or servicing	•
Evaporator with one pass less	Evaporator with one pass on the water side. Evaporator inlet and outlet on opposite sides.	Easy to install, depending on site. Reduced pressure drops	•
Master/slave operation	Unit equipped with supplementary water outlet temperature sensor kit (to be field installed) allowing master/slave operation of two units connected in parallel	Optimised operation of two units connected in parallel operation with operating time equalisation	•
Condenser with one pass less	Condenser with one pass on the water side. Condenser inlet and outlet on opposite sides.	Easy to install, depending on site. Reduced pressure drops	•
21 bar evaporator	Reinforced evaporator for extension of the maximum water-side service pressure to 21 bar (standard 10 bar)	Covers applications with a high water column evaporator side (typically high buildings)	•
Single power connection point	Unit power connection via one main supply connection	Quick and easy installation	2800/4628
21 bar condenser	Reinforced condenser for extension of the maximum water-side service pressure to 21 bar (standard 10 bar)	Covers applications with a high water column condenser side (typically high buildings)	•
Reversed evaporator water connections	Evaporator with reversed water inlet/outlet	Easy installation on sites with specific requirements	•
Reversed condenser water connections	Condenser with reversed water inlet/outlet	Easy installation on sites with specific requirements	•
Condenser insulation	Thermal condenser insulation	Minimizes thermal dispersions condenser side (key option for heat pump or heat recovery applications)	•
Service valve set	Liquid line valve (evaporator inlet) and compressor suction line valve	Allow isolation of various refrigerant circuit components for simplified service and maintenance	•
Lon gateway	Bi-directional communication board complying with Lon Talk protocol	Connects the unit by communication bus to a building management system	•
Control for low cond. temperature	Output signal (0-10 V) to control the condenser water inlet valve	Simple installation: for applications with cold water at condenser inlet (ex. ground-source, groundwater-source, superficial water-source applications) the signal permits to control a 2 or 3-way valve to maintain condenser water temperature (and so condensing pressure) at acceptable values	•
Compliance with Swiss regulations	Additional tests on the water heat exchangers: supply (additional of PED documents) supplementary certificates and test certifications	Conformance with Swiss regulations	•
Compliance with Morocco regulation	Specifics documents according Morocco regulation	Conformance with Morocco regulations	•
Dual relief valves on 3-way valve	Three-way valve upstream of dual relief valves on the evaporator and the oil separator	Valve replacement and inspection facilitated without refrigerant loss. Comforms to European standard EN378/BGVD4	•

• ALL MODELS

Refer to the selection tool to find out which options are not compatible

## OPTIONS

Options	Description	Advantages	LW ST/HE
Compliance with Russian regulations	EAC certification	Conformance with Russian regulations	•
Bacnet over IP	Bi-directional high-speed communication using BACnet protocol over Ethernet network (IP)	Easy and high-speed connection by ethernet line to a building management system. Allows access to multiple unit parameters	•
High condensing temperature	Optimized compressor for operation at high condensing temperature	Increased condenser leaving water temperature up to 63°C. Allows applications with high condensing temperature (heat pumps, installations with not generously sized dry-coolers or more generally, installations with dry-coolers in hot climate). NOTE: to ensure control of the condenser leaving water temperature, this option must be fitted on the units.	Available for all LW HE Available for LW ST 708 / 858 / 1008, and for higher LW ST sizes only with heat pump application option
Condensing temperature limitation	Limitation of the maximum condenser leaving water temperature to 45°C	Reduced maximum power input and current absorption: power cables and protection elements can therefore be downsized	•
Flanged evaporator water connection kit	Victaulic piping connections with flanged joints	Easy installation	•
Specific dry cooler control	Control box for communication with the drycooler via a bus. For OPERA drycooler need to select the cabinet with option control cabinet manage by the chiller Connect"Touch control"	Permits the use of an energy-efficient plug-and-play system	•
Flanged condenser water connection kit	Victaulic piping connections with flanged joints	Easy installation	•
Energy Management Module	Control board with additional inputs/outputs. See Contacts available in option on control description.	Extended remote control capabilities (Set-point reset by 0-20ma input, ice storage end, demand limits, boiler on/off command...)	•
7" user interface	Control supplied with a 7 inch colour touch screen user interface	Enhanced ease of use.	•
Input contact for Refrigerant leak detection	0-10 V signal to report any refrigerant leakage in the unit directly on the controller (the leak detector itself must be supplied by the customer)	Immediate customer notification of refrigerant losses to the atmosphere, allowing timely corrective actions	•
Compliance with Australian regulations	Unit approved to Australian code	Conformance with Australian regulations	•
Low noise level	Evaporator sound insulation	3 dB(A) quieter than standard unit	1308-4608
Evap. dual pumps power/control circuit	Unit equipped with an electrical power and control circuit for two pumps evaporator side	Quick and easy installation: the control of fixed speed pumps is embedded in the unit control	708-3428
Thermal compressor insulation	The compressor is covered with a thermal insulation layer	Prevents air humidity to condensate on the compressor surface	•
Cond. single pump power/control circuit	Unit equipped with an electrical power and control circuit for one pump condenser side	Quick and easy installation: the control of fixed speed pumps is embedded in the unit control	708-3428
Anti-vibration mounts (kit)	Elastomer antivibratils mounts to be place under the unit (Material classified B2 fire class according to DIN 4102 ).	Isolate unit from the building, avoid transmission of vibration and associate noise to the buiding. Must be associate with flexible connection on water side	•
Free Cooling dry cooler management	Control & connections to a Free Cooling Drycooler Opera or Vextra fitted with option FC control box	Easy system management, Extended control capabilities to a drycooler used in Free Cooling mode	•
Heat Pump application	Unit configured for Heat Pump application, include thermal condenser insulation	Optimisation on heating mode & minimize thermal dispersions condenser side	•

- ALL MODELS

Refer to the selection tool to find out which options are not compatible



## STANDARD UNIT TECHNICAL CHARACTERISTICS

LW ST / LW ST + Heat pump application option			708	858	1008	1300	1302	1500	1508	1900	2100	2300	
<b>Heating</b>													
<b>Standard unit</b> Full load performances*	HW1	Nominal capacity	kW	317	360	422	499	555	626	633	793	858	929
		COP	kW/kW	5,96	5,98	5,93	5,98	6,04	5,84	5,81	6,06	5,96	5,79
	HW2	Nominal capacity	kW	312	353	417	473	526	595	624	749	812	879
		COP	kW/kW	4,51	4,50	4,55	4,54	4,56	4,42	4,46	4,54	4,48	4,40
<b>Standard unit</b> Seasonal energy efficiency**	HW1	SCOP <sub>30/35°C</sub>	kWh/kWh	5,98	6,02	5,99	6,45	6,60	6,58	6,31	6,16	6,15	6,13
		η <sub>s</sub> heat <sub>30/35°C</sub>	%	231	233	231	250	256	255	245	238	238	237
		P <sub>rated</sub>	kW	414	426	500	595	660	742	750	945	1022	1095
<b>Cooling</b>													
<b>Standard unit</b> Full load performances*	CW1	Nominal capacity	kW	269	303	354	421	467	525	531	669	720	783
		EER	kW/kW	5,25	5,23	5,17	5,22	5,28	5,12	5,11	5,32	5,23	5,13
	CW2	Nominal capacity	kW	317	362	447	594	639	608	674	851	890	884
		EER	kW/kW	6,46	6,25	6,86	7,04	6,97	5,84	6,38	6,55	6,27	5,68
<b>Standard unit</b> Seasonal energy efficiency**		SEER <sub>12/7°C</sub> Comfort low temp.	kWh/kWh	<b>6,26</b>	<b>6,33</b>	<b>6,40</b>	<b>6,85</b>	<b>7,04</b>	<b>7,12</b>	<b>6,82</b>	<b>6,64</b>	<b>6,63</b>	<b>6,82</b>
		η <sub>s</sub> cool <sub>12/7°C</sub>	%	<b>247</b>	<b>250</b>	<b>253</b>	<b>271</b>	<b>279</b>	<b>282</b>	<b>270</b>	<b>263</b>	<b>262</b>	<b>270</b>
		SEPR <sub>12/7°C</sub> Process high temp.	kWh/kWh	8,60	8,16	8,80	8,12	8,28	7,72	7,90	8,83	8,25	8,01
Integrated Part Load Value		IPLV.SI	kW/kW	6,791	6,845	6,850	6,861	7,165	7,430	7,110	7,185	7,168	7,212
<b>Sound levels - standard unit</b>													
		Sound power level <sup>(1)</sup>	dB(A)	95	95	95	99	99	99	99	99	99	99
		Sound pressure level at 1 m <sup>(2)</sup>	dB(A)	78	78	78	82	82	82	82	82	82	82
<b>Sound levels - unit with Low Noise option</b>													
		Sound power level <sup>(1)</sup>	dB(A)	-	-	-	96	96	96	96	96	96	96
		Sound pressure level at 1 m <sup>(2)</sup>	dB(A)	-	-	-	78	78	78	78	78	78	78
<b>Dimensions - standard unit</b>													
		Length	mm	2724	2724	2724	2741	2741	2741	2741	3059	3059	3059
		Width	mm	928	928	928	936	936	936	936	1040	1040	1040
		Height	mm	1567	1567	1567	1692	1692	1692	1692	1848	1848	1848
		Operating weight <sup>(3)</sup>	kg	2017	2036	2072	2575	2575	2613	2644	3247	3266	3282
<b>Compressors</b>													
Semi-hermetic screw compressors, 50 r/s													
		Circuit A		1	1	1	1	1	1	1	1	1	1
<b>Refrigerant - standard unit</b>													
R-134a													
		Circuit A	kg	84	80	78	92	92	92	92	145	135	125
			teqCO <sub>2</sub>	120	114	112	132	132	132	132	207	193	179

\* In accordance with standard EN14511-3:2018.  
 \*\* In accordance with standard EN14825:2016, average climate  
 HW1 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. kW  
 HW2 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 40°C/45°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. kW  
 CW1 Cooling mode conditions: Evaporator water entering/leaving temperature 12°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. kW  
 CW2 Cooling mode conditions: Evaporator water entering/leaving temperature 23°C/18°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. kW  
 η<sub>s</sub> heat<sub>30/35°C</sub> & SCOP<sub>30/35°C</sub> Values calculated in accordance with EN14825:2016  
 η<sub>s</sub> cool<sub>12/7°C</sub> & SEER<sub>12/7°C</sub> **Bold values compliant to Ecodesign regulation: (EU) No 2016/2281 for Comfort application**  
 SEPR<sub>12/7°C</sub> Values calculated in accordance with EN14825:2016  
 IPLV.SI Calculations according to standard performances AHRI 551-591 (SI)  
 (1) In dB ref=10<sup>-12</sup> W, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). Measured in accordance with ISO 9614-1 and certified by Eurovent.  
 (2) In dB ref 20μPa, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). For information, calculated from the sound power level Lw(A).  
 (3) Weight shown is guideline only. Please refer to the unit nameplate



Eurovent certified values



AHRI certified values  
30XW-only

## STANDARD UNIT TECHNICAL CHARACTERISTICS

LW ST / LW ST + Heat pump application option	708	858	1008	1300	1302	1500	1508	1900	2100	2300	
<b>Oil - standard unit</b>											
Circuit A	l	23,5	23,5	23,5	32	32	32	32	36	36	36
<b>Capacity control</b>											
Connect Touch, electronic expansion valves (EXV)											
Minimum capacity <sup>(4)</sup>	%	20	20	25	30	30	30	30	20	20	20
<b>Evaporator</b>											
Shell and tube flooded type											
Water volume	l	50	56	61	70	70	70	70	109	109	109
Water connections (Victaulic)	in	5	5	5	5	5	5	5	6	6	6
Drain and vent connections (NPT)	in	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Max. water-side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
<b>Condenser</b>											
Shell and tube type											
Water volume	l	55	55	55	76	76	76	76	109	109	109
Water connections (Victaulic)	in	5	5	5	5	5	5	5	6	6	6
Drain and vent connections (NPT)	in	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Max. water-side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

(4) Minimum unit capacity corresponds to a physical state of the unit and is given for indication only. The actual capacity at this stage depends on operating conditions.



## STANDARD UNIT TECHNICAL CHARACTERISTICS

LW ST / LW ST + Heat pump application option			2308	2800	3000	3008	3400	3800	4200	4600	4408	4608	
<b>Heating</b>													
<b>Standard unit</b> Full load performances*	HW1	Nominal capacity	kW	981	1185	1237	1324	1457	1557	1689	1795	1913	2001
		COP	kW/kW	5,98	5,77	5,67	5,79	6,12	5,96	5,76	5,61	5,94	5,92
	HW2	Nominal capacity	kW	958	1123	1174	1297	1375	1466	1592	1687	1867	1948
		COP	kW/kW	4,60	4,40	4,33	4,46	4,63	4,53	4,41	4,33	4,61	4,64
<b>Standard unit</b> Seasonal energy efficiency**	HW1	SCOP <sub>30/35°C</sub>	kWh/kWh	6,33	6,43	6,24	6,30	6,56	6,33	6,22	6,11	6,46	6,50
		η <sub>s heat 30/35°C</sub>	%	245	249	242	244	254	245	241	236	251	252
		P <sub>rated</sub>	kW	1153	1411	1473	1569	1737	1856	2013	2140	2265	2371
<b>Cooling</b>													
<b>Standard unit</b> Full load performances*	CW1	Nominal capacity	kW	829	1005	1049	1128	1242	1327	1438	1532	1637	1712
		EER	kW/kW	5,33	5,19	5,12	5,25	5,55	5,45	5,31	5,24	5,54	5,55
	CW2	Nominal capacity	kW	936	1341	1505	1384	1733	1894	1981	2172	1949	2066
		EER	kW/kW	5,91	6,64	6,91	6,28	7,31	7,29	6,86	6,88	6,47	6,43
<b>Standard unit</b> Seasonal energy efficiency**		<b>SEER<sub>12/17°C</sub> Comfort low temp.</b>	<b>kWh/kWh</b>	<b>7,09</b>	<b>7,07</b>	<b>7,02</b>	<b>6,96</b>	<b>7,51</b>	<b>7,24</b>	<b>7,11</b>	<b>7,13</b>	<b>7,55</b>	<b>7,69</b>
		η <sub>s cool 12/17°C</sub>	%	<b>281</b>	<b>280</b>	<b>278</b>	<b>275</b>	<b>298</b>	<b>287</b>	<b>282</b>	<b>282</b>	<b>299</b>	<b>304</b>
		SEPR <sub>12/17°C</sub> Process high temp.	kWh/kWh	8,01	8,29	8,11	7,96	8,97	9,09	8,34	8,13	8,45	8,50
		IPLV.SI	kW/kW	7,289	7,478	7,367	7,435	7,804	7,725	7,666	7,504	8,000	8,020
<b>Sound levels - standard unit</b>													
Sound power level <sup>(1)</sup>		dB(A)		99	102	102	102	102	102	102	102	102	102
Sound pressure level at 1 m <sup>(2)</sup>		dB(A)		82	84	84	84	83	83	83	83	83	83
<b>Sound levels - unit with Low Noise option</b>													
Sound power level <sup>(1)</sup>		dB(A)		96	99	99	99	99	99	99	99	99	99
Sound pressure level at 1 m <sup>(2)</sup>		dB(A)		78	80	80	80	80	80	80	80	80	80
<b>Dimensions - standard unit</b>													
Length		mm		2780	4025	4025	4025	4730	4730	4730	4730	4790	4790
Width		mm		1042	1036	1036	1036	1156	1156	1156	1156	1902	1902
Height		mm		1898	1870	1870	1925	2051	2051	2051	2051	1515	1515
<b>Operating weight<sup>(3)</sup></b>		<b>kg</b>		<b>3492</b>	<b>5370</b>	<b>5408</b>	<b>5698</b>	<b>7066</b>	<b>7267</b>	<b>7305</b>	<b>7337</b>	<b>8681</b>	<b>8699</b>
<b>Compressors</b>													
Semi-hermetic screw compressors, 50 r/s													
Circuit A				1	1	1	1	1	1	1	1	1	1
Circuit B				-	1	1	1	1	1	1	1	1	1
<b>Refrigerant - standard unit</b>													
R-134a													
Circuit A	kg		158	85	85	105	120	115	110	105	195	195	
	teqCO <sub>2</sub>		226	122	122	150	172	164	157	150	279	279	
Circuit B	kg		-	85	85	105	120	115	110	105	195	195	
	teqCO <sub>2</sub>		-	122	122	150	172	164	157	150	279	279	

\* In accordance with standard EN14511-3:2018.  
 \*\* In accordance with standard EN14825:2016, average climate  
 HW1 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. kW  
 HW2 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 40°C/45°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. kW  
 CW1 Cooling mode conditions: Evaporator water entering/leaving temperature 12°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. K/W  
 CW2 Cooling mode conditions: Evaporator water entering/leaving temperature 23°C/18°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. K/W  
 η<sub>s heat 30/35°C</sub> & SCOP<sub>30/35°C</sub> Values calculated in accordance with EN14825:2016  
 η<sub>s cool 12/17°C</sub> & SEER<sub>12/17°C</sub> **Bold values compliant to Ecodesign regulation: (EU) No 2016/2281 for Comfort application**  
 SEPR<sub>12/17°C</sub> Values calculated in accordance with EN14825:2016  
 IPLV.SI Calculations according to standard performances AHRI 551-591 (SI)  
 (1) In dB ref=10<sup>-12</sup> W, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). Measured in accordance with ISO 9614-1 and certified by Eurovent.  
 (2) In dB ref 20μPa, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). For information, calculated from the sound power level Lw(A).  
 (3) Weight shown is guideline only. Please refer to the unit nameplate



Eurovent certified values



AHRI certified values  
30XW-only

## STANDARD UNIT TECHNICAL CHARACTERISTICS

LW ST / LW ST + Heat pump application option		2308	2800	3000	3008	3400	3800	4200	4600	4408	4608
<b>Oil - standard unit</b>											
Circuit A	l	36	32	32	32	36	36	36	36	36	36
Circuit B	l	-	32	32	32	32	36	36	36	36	36
<b>Capacity control</b>		Connect Touch, electronic expansion valves (EXV)									
Minimum capacity <sup>(4)</sup>	%	20	15	15	15	15	10	10	10	10	10
<b>Evaporator</b>		Shell and tube flooded type									
Water volume	l	98	182	182	205	301	301	301	301	354	354
Water connections (Victaulic)	in	6	6	6	8	8	8	8	8	8	8
Drain and vent connections (NPT)	in	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Max. water-side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
<b>Condenser</b>		Shell and tube type									
Water volume	l	137	193	193	193	340	340	340	340	426	426
Water connections (Victaulic)	in	8	8	8	8	8	8	8	8	8	8
Drain and vent connections (NPT)	in	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Max. water-side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

(4) Minimum unit capacity corresponds to a physical state of the unit and is given for indication only. The actual capacity at this stage depends on operating conditions.



## HIGH EFFICIENCY UNIT TECHNICAL CHARACTERISTICS

LW HE / LW HE + Heat pump application option			1328	1528	1928	2128	2328	2628	3028	3428	3828	4228	4628	
<b>Heating</b>														
<b>Standard unit</b> Full load performances*	HW1	Nominal capacity	kW	586	667	851	912	995	1201	1327	1522	1680	1863	2019
		COP	kW/kW	6,36	6,30	6,52	6,29	6,27	6,35	6,24	6,29	6,06	6,38	6,27
	HW2	Nominal capacity	kW	573	654	836	896	970	1179	1296	1489	1643	1823	1964
		COP	kW/kW	4,82	4,78	4,92	4,74	4,78	4,85	4,77	4,82	4,66	4,84	4,81
<b>Standard unit</b> Seasonal energy efficiency**	HW1	SCOP <sub>30/35°C</sub>	kWh/kWh	6,58	6,59	6,48	6,27	6,48	6,72	6,85	6,75	6,38	6,73	6,71
		η <sub>s</sub> heat <sub>30/35°C</sub>	%	255	256	251	243	251	261	266	262	247	261	260
		P <sub>rated</sub>	kW	694	791	1009	1081	1180	1424	1572	1805	1993	2210	2395
<b>Cooling</b>														
<b>Standard unit</b> Full load performances*	CW1	Nominal capacity	kW	502	569	727	776	850	1025	1143	1308	1435	1606	1736
		EER	kW/kW	5,63	5,57	5,75	5,55	5,59	5,67	5,71	5,74	5,53	5,80	5,72
	CW2	Nominal capacity	kW	617	727	890	971	1001	1375	1425	1772	1905	2034	2105
		EER	kW/kW	6,88	6,94	7,20	6,98	6,83	7,46	6,90	7,55	7,28	7,34	7,11
<b>Standard unit</b> Seasonal energy efficiency**		<b>SEER<sub>12/7°C</sub> Comfort low temp.</b>	<b>kWh/kWh</b>	<b>7,00</b>	<b>7,12</b>	<b>7,05</b>	<b>6,82</b>	<b>7,24</b>	<b>7,34</b>	<b>7,78</b>	<b>7,69</b>	<b>7,29</b>	<b>7,79</b>	<b>7,86</b>
		η <sub>s</sub> cool <sub>12/7°C</sub>	%	<b>277</b>	<b>282</b>	<b>279</b>	<b>270</b>	<b>287</b>	<b>291</b>	<b>308</b>	<b>304</b>	<b>289</b>	<b>309</b>	<b>311</b>
		SEPR <sub>12/7°C</sub> Process high temp.	kWh/kWh	8,42	8,50	9,23	8,33	8,54	8,50	8,85	9,00	8,89	8,82	8,83
		IPLV, SI	kW/kW	7,391	7,473	7,556	7,301	7,538	7,639	8,053	8,150	7,485	7,757	8,089
<b>Sound levels - standard unit</b>														
		Sound power level <sup>(1)</sup>	dB(A)	99	99	99	99	99	102	102	102	102	102	102
		Sound pressure level at 1 m <sup>(2)</sup>	dB(A)	82	82	81	81	81	83	83	83	83	83	83
<b>Sound levels - standard unit + Low noise level option</b>														
		Sound power level <sup>(1)</sup>	dB(A)	96	96	96	96	96	99	99	99	99	99	99
		Sound pressure level at 1 m <sup>(2)</sup>	dB(A)	78	78	78	78	78	80	80	80	80	80	80
<b>Dimensions - standard unit</b>														
		Length	mm	3059	3059	3290	3290	3290	4730	4730	4730	4730	4832	4832
		Width	mm	936	936	1069	1069	1069	1039	1039	1162	1162	2129	2129
		Height	mm	1743	1743	1950	1950	1950	1997	1997	2051	2051	1562	1562
		<b>Operating weight<sup>(3)</sup></b>	<b>kg</b>	<b>2981</b>	<b>3020</b>	<b>3912</b>	<b>3947</b>	<b>3965</b>	<b>6872</b>	<b>6950</b>	<b>7542</b>	<b>7752</b>	<b>10910</b>	<b>10946</b>
<b>Compressors</b>														
Semi-hermetic screw compressors, 50 r/s														
		Circuit A		1	1	1	1	1	1	1	1	1	1	1
		Circuit B		-	-	-	-	-	1	1	1	1	1	1
<b>Refrigerant - standard unit</b>														
R-134a														
		Circuit A	kg	130	130	180	175	177	120	120	130	130	240	250
			teqCO <sub>2</sub>	186	186	257	250	253	172	172	186	186	343	358
		Circuit B	kg	-	-	-	-	-	120	120	150	130	240	250
			teqCO <sub>2</sub>	-	-	-	-	-	-	172	172	215	186	343

\* In accordance with standard EN14511-3:2018.  
 \*\* In accordance with standard EN14825:2016, average climate  
 HW1 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. kW  
 HW2 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 40°C/45°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. kW  
 CW1 Cooling mode conditions: Evaporator water entering/leaving temperature 12°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. K/W  
 CW2 Cooling mode conditions: Evaporator water entering/leaving temperature 23°C/18°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. K/W  
 η<sub>s</sub> heat<sub>30/35°C</sub> & SCOP<sub>30/35°C</sub> Values calculated in accordance with EN14825:2016  
 η<sub>s</sub> cool<sub>12/7°C</sub> & SEER<sub>12/7°C</sub> **Bold values compliant to Ecodesign regulation: (EU) No 2016/2281 for Comfort application**  
 SEPR<sub>12/7°C</sub> Values calculated in accordance with EN14825:2016  
 IPLV, SI Calculations according to standard performances AHRI 551-591 (SI)  
 (1) In dB ref=10<sup>-12</sup> W, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). Measured in accordance with ISO 9614-1 and certified by Eurovent.  
 (2) In dB ref 20μPa, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). For information, calculated from the sound power level Lw(A).  
 (3) Weight shown is guideline only. Please refer to the unit nameplate



Eurovent certified values



AHRI certified values  
30XW-only



## HIGH EFFICIENCY UNIT TECHNICAL CHARACTERISTICS

LW HE / LW HE + Heat pump application option	1328	1528	1928	2128	2328	2628	3028	3428	3828	4228	4628
<b>Oil - standard unit</b>											
Circuit A	l	32	32	36	36	36	32	32	36	36	36
Circuit B	l	-	-	-	-	-	32	32	32	36	36
<b>Capacity control</b>											
Connect Touch, electronic expansion valves (EXV)											
Minimum capacity <sup>(4)</sup>	%	30	30	20	20	20	15	15	15	10	10
<b>Evaporator</b>											
Shell and tube flooded type											
Water volume	l	101	101	154	154	154	293	293	321	321	473
Water connections (Victaulic)	in	6	6	8	8	8	8	8	8	8	10
Drain and vent connections (NPT)	in	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Max. water-side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
<b>Condenser</b>											
Shell and tube type											
Water volume	l	103	103	148	148	148	316	316	340	340	623
Water connections (Victaulic)	in	6	6	8	8	8	8	8	8	8	10
Drain and vent connections (NPT)	in	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Max. water-side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

(4) Minimum unit capacity corresponds to a physical state of the unit and is given for indication only. The actual capacity at this stage depends on operating conditions.

## TECHNICAL CHARACTERISTICS FOR LOW TEMPERATURE UNITS

### STANDARD AND HIGH-EFFICIENCY LW UNITS (LOW TEMPERATURE BRINE SOLUTION)

LW ST	708	858	1008	1300	1302	1500	1508	2100	2300	
<b>Operating weight</b>	kg	2041	2063	2102	2609	2609	2647	2678	3492	3516
<b>Refrigerant charge <sup>(1)</sup></b>										
R-134a										
Circuit A	kg	91	86	84	99	99	99	99	146	135
	teqCO <sub>2</sub>	129730	123552	120463	142085	142085	142085	142085	208494	193050
Circuit B	kg	0	0	0	0	0	0	0	0	0
	teqCO <sub>2</sub>	0	0	0	0	0	0	0	0	0
<b>Evaporator</b>										
Single pass, multi-pipe flooded type										
Water volume	l	50	56	61	70	70	70	70	109	109
Water connections (Victaulic)	in	5	5	5	6	6	6	6	6	6
Drain and vent connections (NPT)	in	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Max. water-side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000

LW ST	2308	2800	3000	3008	3400	4200	4600	4408	4608	
<b>Operating weight</b>	kg	3720	5467	5505	5806	7392	7781	7829	9193	9219
<b>Refrigerant charge <sup>(1)</sup></b>										
R-134a										
Circuit A	kg	171	92	92	113	130	119	113	211	211
	teqCO <sub>2</sub>	244015	131274	131274	162162	185328	169884	162162	301158	301158
Circuit B	kg	0	92	92	113	130	119	113	211	211
	teqCO <sub>2</sub>	0	131274	131274	162162	185328	169884	162162	301158	301730
<b>Evaporator</b>										
Single pass, multi-pipe flooded type										
Water volume	l	98	182	182	205	301	301	301	354	354
Water connections (Victaulic)	in	6	6	6	8	8	8	8	8	8
Drain and vent connections (NPT)	in	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Max. water-side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000

(1) Weights are guidelines only. The refrigerant charge is given on the unit nameplate.

## ELECTRICAL DATA NOTES FOR STANDARD UNITS

LW ST		708	858	1008	1300	1302	1500	1508	1900	2100	2300	2308	2800	3000	3008	3400	3800	4200	4600	4408	4608
<b>Power circuit</b>																					
Nominal voltage	V-ph-Hz	400-3-50																			
Voltage range	V	360-440																			
<b>Control circuit</b>																					
24 V via the built-in transformer																					
<b>Nominal start-up current<sup>(1)</sup></b>																					
Circuit A	A	233	233	303	414	414	414	414	587	587	587	587	414	414	414	587	587	587	587	587	587
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	414	414	414	414	587	587	587	587	587
Single power connection point option	A	-	-	-	-	-	-	-	-	-	-	-	558	574	574	747	780	801	819	819	819
<b>Maximum start-up current<sup>(2)</sup></b>																					
Circuit A	A	233	233	303	414	414	414	414	587	587	587	587	414	414	414	587	587	587	587	587	587
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	414	414	414	414	587	587	587	587	587
Single power connection point option	A	-	-	-	-	-	-	-	-	-	-	-	631	656	656	829	882	904	938	938	938
<b>Cosine phi</b>																					
Nominal <sup>(3)</sup>		0,83	0,85	0,83	0,87	0,88	0,89	0,89	0,88	0,89	0,90	0,90	0,88	0,89	0,89	0,88	0,88	0,89	0,9	0,9	0,9
Maximum <sup>(4)</sup>		0,89	0,89	0,88	0,90	0,90	0,91	0,91	0,90	0,91	0,92	0,92	0,90	0,91	0,91	0,90	0,90	0,91	0,92	0,92	0,92
Total harmonic distortion <sup>(4)</sup>	%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Maximum power input*</b>																					
Circuit A	kW	76	89	97	128	135	151	151	184	200	223	223	150	151	151	184	184	200	223	223	223
Circuit B	kW	-	-	-	-	-	-	-	-	-	-	-	135	151	151	151	184	200	223	202	223
Single power connection point option	kW	-	-	-	-	-	-	-	-	-	-	-	284	301	301	334	367	399	447	425	447
<b>Nominal input current<sup>(3)</sup></b>																					
Circuit A	A	84	96	113	136	144	162	162	193	214	232	232	162	162	162	193	193	214	232	232	232
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	144	162	162	162	193	214	232	214	232
Single power connection point option	A	-	-	-	-	-	-	-	-	-	-	-	306	324	324	355	386	427	464	446	464
<b>Maximum input current (Un)*</b>																					
Circuit A	A	123	145	160	206	217	242	242	295	317	351	351	242	242	242	295	295	317	351	351	351
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	217	242	242	242	295	317	351	317	351
Single power connection point option	A	-	-	-	-	-	-	-	-	-	-	-	459	484	484	537	590	634	702	668	702
<b>Maximum input current (Un -10%)<sup>(4)</sup></b>																					
Circuit A	A	138	162	178	218	230	260	260	304	340	358	358	260	260	260	304	304	340	358	358	358
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	230	260	260	260	304	340	358	340	358
Single power connection point option	A	-	-	-	-	-	-	-	-	-	-	-	490	520	520	564	608	680	716	698	716
<b>Maximum input power with condensing temperature limitation option*</b>																					
Circuit A	kW	67	79	87	114	118	133	134	173	183	205	205	133	133	133	173	173	183	207	207	207
Circuit B	kW	-	-	-	-	-	-	-	-	-	-	-	118	133	133	133	173	183	207	185	207
Single power connection point option	kW	-	-	-	-	-	-	-	-	-	-	-	251	265	265	305	346	365	414	391	414
<b>Maximum input current (Un) with condensing temperature limitation option*</b>																					
Circuit A	A	109	129	142	183	191	212	212	278	290	325	325	212	212	212	278	278	290	325	325	325
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	191	212	212	212	278	290	325	290	325
Single power connection point option	A	-	-	-	-	-	-	-	-	-	-	-	403	424	424	490	556	580	650	615	650

(1) Instantaneous start-up current (maximum operating current of the smallest compressor(s) + locked rotor current or reduced start-up current of the largest compressor). Values obtained at standard Eurovent unit operating conditions: evaporator entering/leaving water temperature = 12°C/7°C, condenser entering/leaving water temperature = 30°C/35°C.

(2) Instantaneous start-up current (maximum operating current of the smallest compressor(s) + locked rotor current or reduced start-up current of the largest compressor). Values obtained at operation point with maximum unit power input.

(3) Values obtained at standard Eurovent unit operating conditions: evaporator entering/leaving water temperature = 12°C/7°C, condenser entering/leaving water temperature = 30°C/35°C.

(4) Values obtained at operation point with maximum unit power input.

\* Values obtained in operation with maximum unit power input. Values given on the unit name plate.



## HIGH EFFICIENCY UNIT ELECTRICAL DATA NOTES

LW HE		1328	1528	1928	2128	2328	2628	3028	3428	3828	4228	4628
<b>Power circuit</b>												
Nominal voltage	V-ph-Hz	400-3-50										
Voltage range	V	360-440										
<b>Control circuit</b>												
24 V via the built-in transformer												
<b>Nominal start-up current<sup>(1)</sup></b>												
Circuit A	A	414	414	587	587	587	414	414	587	587	587	587
Circuit B	A	-	-	-	-	-	414	414	414	587	587	587
Single power connection point option	A	-	-	-	-	-	556	574	747	780	801	819
<b>Maximum start-up current<sup>(2)</sup></b>												
Circuit A	A	414	414	587	587	587	414	414	587	587	587	587
Circuit B	A	-	-	-	-	-	414	414	414	587	587	587
Single power connection point option	A	-	-	-	-	-	631	656	829	882	904	938
<b>Cosine phi</b>												
Nominal <sup>(3)</sup>		0,88	0,89	0,88	0,89	0,90	0,86	0,87	0,88	0,88	0,89	0,90
Maximum <sup>(4)</sup>		0,90	0,90	0,90	0,91	0,92	0,89	0,90	0,90	0,90	0,91	0,92
Total harmonic distortion <sup>(4)</sup>	%	0	0	0	0	0	0	0	0	0	0	0
<b>Maximum power input*</b>												
Circuit A	kW	135	151	184	200	223	134	151	184	184	200	223
Circuit B	kW	-	-	-	-	-	134	151	151	184	200	223
Single power connection point option	kW	-	-	-	-	-	267	301	334	367	399	447
<b>Nominal input current<sup>(3)</sup></b>												
Circuit A	A	144	162	193	214	232	144	162	193	193	214	232
Circuit B	A	-	-	-	-	-	144	162	162	193	214	232
Single power connection point option	A	-	-	-	-	-	288	324	355	386	427	464
<b>Maximum input current (Un)*</b>												
Circuit A	A	217	242	295	317	351	217	242	295	295	317	351
Circuit B	A	-	-	-	-	-	217	242	242	295	317	351
Single power connection point option	A	-	-	-	-	-	434	484	537	590	634	702
<b>Maximum input current (Un -10%)<sup>(4)</sup></b>												
Circuit A	A	230	260	304	340	358	230	260	304	304	340	358
Circuit B	A	-	-	-	-	-	230	260	260	304	340	358
Single power connection point option	A	-	-	-	-	-	460	520	564	608	680	716
<b>Maximum input power with condensing temperature limitation option*</b>												
Circuit A	kW	118	133	173	183	207	118	133	173	173	183	207
Circuit B	kW	-	-	-	-	-	118	133	133	173	183	207
Single power connection point option	kW	-	-	-	-	-	235	265	305	346	365	414
<b>Maximum input current (Un) with condensing temperature limitation option*</b>												
Circuit A	A	191	212	278	290	325	191	212	278	278	290	325
Circuit B	A	-	-	-	-	-	191	212	212	278	290	325
Single power connection point option	A	-	-	-	-	-	382	424	490	556	580	650

(1) Instantaneous start-up current (maximum operating current of the smallest compressor(s) + locked rotor current or reduced start-up current of the largest compressor). Values obtained at standard Eurovent unit operating conditions: evaporator entering/leaving water temperature = 12°C/7°C, condenser entering/leaving water temperature = 30°C/35°C.

(2) Instantaneous start-up current (maximum operating current of the smallest compressor(s) + locked rotor current or reduced start-up current of the largest compressor). Values obtained at operation with maximum unit power input.

(3) Values obtained at standard Eurovent unit operating conditions: evaporator entering/leaving water temperature = 12°C/7°C, condenser entering/leaving water temperature = 30°C/35°C.

(4) Values obtained at operation with maximum unit power input.

\* Values obtained in operation with maximum unit power input. Values given on the unit name plate.



## TECHNICAL CHARACTERISTICS

### STANDARD UNITS FOR HIGH CONDENSING TEMPERATURES

LW ST + High condensing option			708	858	1008	1300	1302	1500	1508	1900	2100	2300	
<b>Heating</b>													
<b>Unit with high condensing option</b> Full load performances*	HW1	Nominal capacity	kW	328	366	413	502	536	597	618	756	845	869
		COP	kW/kW	5,49	5,48	5,44	5,11	5,41	5,27	5,41	5,31	5,37	5,17
	HW2	Nominal heating capacity	kW	319	356	402	470	501	559	599	706	789	812
		COP	kW/kW	4,54	4,51	4,47	4,21	4,45	4,36	4,48	4,39	4,44	4,31
	HW3	Nominal capacity	kW	310	347	391	440	469	523	582	659	738	760
		COP	kW/kW	3,80	3,78	3,75	3,47	3,67	3,61	3,76	3,62	3,68	3,57
<b>Unit with high condensing option</b> Seasonal energy efficiency**	HW1	SCOP <sub>30/35°C</sub>	kWh/kWh	5,77	5,94	5,86	5,54	5,77	5,75	5,72	5,55	5,79	5,01
		η <sub>s</sub> heat <sub>30/35°C</sub>	%	223	230	226	214	223	222	221	214	223	193
	HW3	SCOP <sub>47/55°C</sub>	kWh/kWh	4,58	4,63	4,56	4,20	4,42	4,45	4,50	4,26	4,45	3,86
		η <sub>s</sub> heat <sub>47/55°C</sub>	%	175	177	175	160	169	170	172	163	170	146
		Prated	kW	411	415	467	535	571	637	697	803	898	926
	<b>Cooling</b>												
<b>Unit with high condensing option</b> Full load performances*	CW1	Nominal capacity	kW	278	309	348	NA	NA	NA	NA	NA	NA	NA
		EER	kW/kW	4,83	4,80	4,76	NA	NA	NA	NA	NA	NA	NA
<b>Unit with high condensing option</b> Seasonal energy efficiency**		<b>SEER<sub>12/7°C</sub> Comfort low temp.</b>	<b>kWh/kWh</b>	<b>6,19</b>	<b>6,29</b>	<b>6,22</b>	NA	NA	NA	NA	NA	NA	
		η <sub>s</sub> cool <sub>12/7°C</sub>	%	<b>245</b>	<b>249</b>	<b>246</b>	NA	NA	NA	NA	NA	NA	
		SEPR <sub>12/7°C</sub> Process high temp.	kWh/kWh	6,67	6,72	6,57	NA	NA	NA	NA	NA	NA	NA
Integrated Part Load Value	IPLV.SI	kW/kW	6,364	6,527	6,531	5,928	6,176	6,287	6,185	5,931	6,433	5,575	
<b>Sound levels - standard unit</b>													
Sound power level <sup>(1)</sup>		dB(A)	95	95	95	99	99	99	99	102	102	102	
Sound pressure level at 1 m <sup>(2)</sup>		dB(A)	78	78	78	82	82	82	82	84	84	84	
<b>Sound levels - standard unit + low noise level option</b>													
Sound power level <sup>(1)</sup>		dB(A)	-	-	-	96	96	96	96	100	100	100	
Sound pressure level at 1 m <sup>(2)</sup>		dB(A)	-	-	-	78	78	78	78	82	82	82	
<b>Dimensions</b>													
Length		mm	2724	2724	2724	2741	2741	2741	2741	3059	3059	3059	
Width		mm	928	928	928	936	936	936	936	1090	1090	1090	
Height		mm	1567	1567	1567	1692	1692	1692	1692	1858	1858	1858	
Operating weight <sup>(3)</sup>		kg	2017	2036	2072	2575	2575	2613	2644	3407	3438	3462	
<b>Compressors</b>													
Semi-hermetic screw compressors, 50 r/s													
Circuit A			1	1	1	1	1	1	1	1	1	1	
<b>Refrigerant<sup>(3)</sup></b>													
R-134a													
Circuit A		kg	84	80	78	92	92	92	92	145	135	125	
		teqCO <sub>2</sub>	120	114	112	132	132	132	132	207	193	179	

\* In accordance with standard EN14511-3:2018.  
 \*\* In accordance with standard EN14825:2016, average climate  
 HW1 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. kW  
 HW2 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 40°C/45°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. kW  
 HW3 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 47°C/55°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. kW  
 CW1 Cooling mode conditions: Evaporator water entering/leaving temperature 12°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m<sup>2</sup>.kW  
 η<sub>s</sub> heat<sub>30/35°C</sub> & SCOP<sub>30/35°C</sub> Values calculated in accordance with EN14825:2016  
 η<sub>s</sub> heat<sub>47/55°C</sub> & SCOP<sub>47/55°C</sub> Values calculated in accordance with EN14825:2016  
 η<sub>s</sub> cool<sub>12/7°C</sub> & SEER<sub>12/7°C</sub> **Bold values compliant to Ecodesign regulation: (EU) No 2016/2281 for Comfort application**  
 SEPR<sub>12/7°C</sub> Values calculated in accordance with EN14825:2016  
 IPLV.SI Calculations according to standard performances AHRI 551-591 (SI)  
 NA Non Authorized for the specific application for CEE market  
 (1) In dB ref=10<sup>-12</sup> W, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). Measured in accordance with ISO 9614-1 and certified by Eurovent.  
 (2) In dB ref 20μPa, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). For information, calculated from the sound power level Lw(A).  
 (3) Weight shown is guideline only. Please refer to the unit nameplate



Eurovent certified values



AHRI certified values  
30XW-only

## TECHNICAL CHARACTERISTICS

### STANDARD UNITS FOR HIGH CONDENSING TEMPERATURES

LW ST + High condensing option	708	858	1008	1300	1302	1500	1508	1900	2100	2300	
<b>Oil</b>											
Circuit A	l	23,5	23,5	23,5	32	32	32	32	36	36	36
<b>Capacity control</b>											
Connect Touch, electronic expansion valves (EXV)											
Minimum capacity <sup>(4)</sup>	%	30	30	30	30	30	30	30	25	25	25
<b>Evaporator</b>											
Shell and tube flooded type											
Net water volume	l	50	56	61	70	70	70	70	109	109	109
Water connections (Victaulic)	in	5	5	5	5	5	5	5	6	6	6
Drain and vent connections (NPT)	in	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Max. water-side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
<b>Condenser</b>											
Shell and tube type											
Net water volume	l	55	55	55	76	76	76	76	109	109	109
Water connections (Victaulic)	in	5	5	5	5	5	5	5	6	6	6
Drain and vent connections (NPT)	in	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Max. water-side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

(4) Minimum unit capacity corresponds to a physical state of the unit and is given for indication only. The actual capacity at this stage depends on operating conditions.

## TECHNICAL CHARACTERISTICS

### STANDARD UNITS FOR HIGH CONDENSING TEMPERATURES

LW ST + High condensing option			2308	2800	3000	3008	3400	3800	4200	4600	4408	4608	
<b>Heating</b>													
<b>Unit with high condensing option</b> Full load performances*	HW1	Nominal capacity	kW	963	1163	1228	1338	1432	1551	1671	1776	1928	1991
		COP	kW/kW	5,36	5,37	5,28	5,38	5,56	5,32	5,23	5,12	5,34	5,27
	HW2	Nominal heating capacity	kW	939	1085	1146	1290	1329	1445	1558	1649	1873	1936
		COP	kW/kW	4,46	4,46	4,40	4,48	4,63	4,45	4,38	4,34	4,50	4,46
	HW3	Nominal capacity	kW	915	1012	1068	1249	1244	1345	1452	1543	1821	1882
		COP	kW/kW	3,73	3,71	3,66	3,77	3,83	3,68	3,64	3,63	3,81	3,77
<b>Unit with high condensing option</b> Seasonal energy efficiency**	HW1	SCOP <sub>30/35°C</sub>	kWh/kWh	5,66	5,86	5,86	5,78	6,09	5,69	5,79	5,43	5,93	5,92
		η <sub>s</sub> heat <sub>30/35°C</sub>	%	218	226	226	223	236	220	224	209	229	229
	HW3	SCOP <sub>47/55°C</sub>	kWh/kWh	4,47	4,73	4,73	4,61	4,68	4,38	4,45	4,35	4,74	4,76
		η <sub>s</sub> heat <sub>47/55°C</sub>	%	171	181	181	176	179	167	170	166	182	182
		P <sub>rated</sub>	kW	1094	1234	1303	1497	1518	1641	1770	1882	2179	2253
<b>Cooling</b>													
<b>Unit with high condensing option</b> Full load performances*	CW1	Nominal capacity	kW	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		EER	kW/kW	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Unit with high condensing option</b> Seasonal energy efficiency**		SEER <sub>12/7°C</sub> Comfort low temp.	kWh/kWh	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		η <sub>s</sub> cool <sub>12/7°C</sub>	%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		SEPR <sub>12/7°C</sub> Process high temp.	kWh/kWh	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Integrated Part Load Value	IPLV.SI	kW/kW	6,351	6,572	6,595	6,522	6,873	6,211	6,615	6,366	6,939	7,136	
<b>Sound levels - standard unit</b>													
Sound power level <sup>(1)</sup>		dB(A)	102	102	102	102	105	105	105	105	105	105	105
Sound pressure level at 1 m <sup>(2)</sup>		dB(A)	84	84	84	84	86	86	86	86	86	86	86
<b>Sound levels - standard unit + low noise level option</b>													
Sound power level <sup>(1)</sup>		dB(A)	100	99	99	99	103	103	103	103	103	103	103
Sound pressure level at 1 m <sup>(2)</sup>		dB(A)	82	80	80	80	84	84	84	84	84	84	84
<b>Dimensions</b>													
Length		mm	2780	4025	4025	4025	4730	4730	4730	4730	4790	4790	4790
Width		mm	1090	1036	1036	1036	1201	1201	1201	1201	1947	1947	1947
Height		mm	1920	1870	1870	1925	2071	2071	2071	2071	1535	1535	1535
Operating weight <sup>(3)</sup>		kg	3672	5370	5408	5698	7233	7554	7622	7670	9006	9032	9032
<b>Compressors</b>													
Semi-hermetic screw compressors, 50 r/s													
Circuit A			1	1	1	1	1	1	1	1	1	1	1
Circuit B			-	1	1	1	1	1	1	1	1	1	1
<b>Refrigerant<sup>(3)</sup></b>													
R-134a													
Circuit A		kg	158	85	85	105	120	115	110	105	195	195	195
		teqCO <sub>2</sub>	226	122	122	150	172	164	157	150	279	279	279
Circuit B		kg	-	85	85	105	120	115	110	105	195	195	195
		teqCO <sub>2</sub>	-	122	122	150	172	164	157	150	279	279	279

\* In accordance with standard EN14511-3:2018.  
 \*\* In accordance with standard EN14825:2016, average climate  
 HW1 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. kW  
 HW2 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 40°C/45°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. kW  
 HW3 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 47°C/55°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. kW  
 CW1 Cooling mode conditions: Evaporator water entering/leaving water temperature 12°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m<sup>2</sup>.kW  
 η<sub>s</sub> heat<sub>30/35°C</sub> & SCOP<sub>30/35°C</sub> Values calculated in accordance with EN14825:2016  
 η<sub>s</sub> heat<sub>47/55°C</sub> & SCOP<sub>47/55°C</sub> Values calculated in accordance with EN14825:2016  
 IPLV.SI Calculations according to standard performances AHRI 551-591 (SI)  
 (1) In dB ref=10<sup>-12</sup> W, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). Measured in accordance with ISO 9614-1 and certified by Eurovent.  
 (2) In dB ref 20μPa, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). For information, calculated from the sound power level Lw(A).  
 (3) Weight shown is guideline only. Please refer to the unit nameplate



Eurovent certified values



AHRI certified values  
30XW-only

## TECHNICAL CHARACTERISTICS

### STANDARD UNITS FOR HIGH CONDENSING TEMPERATURES

LW ST + High condensing option	2308	2800	3000	3008	3400	3800	4200	4600	4408	4608
<b>Oil</b>										
Circuit A	l	36	32	32	32	36	36	36	36	36
Circuit B	l	-	32	32	32	32	36	36	36	36
<b>Capacity control</b>										
Connect Touch, electronic expansion valves (EXV)										
Minimum capacity <sup>(4)</sup>	%	25	15	15	15	10	10	10	10	10
<b>Evaporator</b>										
Multi-pipe flooded type										
Net water volume	l	98	182	182	205	301	301	301	301	354
Water connections (Victaulic)	in	6	6	6	8	8	8	8	8	8
Drain and vent connections (NPT)	in	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Max. water-side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000
<b>Condenser</b>										
Multi-pipe flooded type										
Net water volume	l	137	193	193	193	340	340	340	340	426
Water connections (Victaulic)	in	8	8	8	8	8	8	8	8	8
Drain and vent connections (NPT)	in	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Max. water-side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000

(4) Minimum unit capacity corresponds to a physical state of the unit and is given for indication only. The actual capacity at this stage depends on operating conditions.

## TECHNICAL CHARACTERISTICS

### HIGH EFFICIENCY UNITS FOR HIGH CONDENSING TEMPERATURES



LW HE + high condensing option				1328	1528	1928	2128	2328	2628	3028	3428	3828	4228	4628
<b>Heating</b>														
<b>Unit with high condensing option</b> Full load performances*	HW1	Nominal capacity	kW	600	670	840	910	975	1188	1375	1514	1698	1890	1983
		COP	kW/kW	5,89	5,90	5,72	5,58	5,72	5,61	5,77	5,55	5,40	5,78	5,73
	HW2	Nominal heating capacity	kW	580	646	815	885	950	1147	1322	1465	1648	1834	1929
		COP	kW/kW	4,85	4,86	4,72	4,61	4,75	4,65	4,80	4,62	4,52	4,80	4,79
	HW3	Nominal capacity	kW	561	625	790	862	925	1110	1275	1419	1598	1783	1874
		COP	kW/kW	4,02	4,04	3,92	3,83	3,97	3,86	4,01	3,88	3,81	4,00	4,00
<b>Unit with high condensing option</b> Seasonal energy efficiency**	HW1	SCOP <sub>30/35°C</sub>	kWh/kWh	6,15	6,22	6,40	6,11	5,99	5,97	6,24	6,18	6,18	6,50	6,21
		η <sub>s heat 30/35°C</sub>	%	238	241	248	236	231	231	242	239	239	252	240
		SCOP <sub>47/55°C</sub>	kWh/kWh	4,78	4,86	4,97	4,76	4,73	4,63	4,88	4,88	4,94	5,07	4,92
	HW3	η <sub>s heat 47/55°C</sub>	%	183	186	191	182	181	177	187	187	189	195	189
		P <sub>rated</sub>	kW	673	749	947	1030	1106	1330	1531	1701	1915	2133	2243
		<b>Cooling</b>												
<b>Unit with high condensing option</b> Full load performances*	CW1	Nominal cooling capacity	kW	510	569	715	770	833	1011	1178	1287	1437	1613	1706
		EER	kW/kW	5,14	5,17	5,02	4,88	5,09	4,98	5,23	4,96	4,84	5,15	5,21
<b>Unit with high condensing option</b> Seasonal energy efficiency**	<b>SEER<sub>12/7°C</sub> Comfort low temp.</b>		<b>kWh/kWh</b>	<b>6,53</b>	<b>6,68</b>	<b>6,81</b>	<b>6,56</b>	<b>6,45</b>	<b>6,51</b>	<b>6,95</b>	<b>6,76</b>	<b>6,66</b>	<b>7,13</b>	<b>6,90</b>
	η <sub>s cool 12/7°C</sub>		%	<b>258</b>	<b>264</b>	<b>269</b>	<b>259</b>	<b>255</b>	<b>258</b>	<b>275</b>	<b>267</b>	<b>264</b>	<b>282</b>	<b>273</b>
	SEPR <sub>12/7°C</sub> Process high temp.		kWh/kWh	6,90	6,93	7,23	6,68	6,38	6,71	6,97	6,88	7,03	7,15	6,63
Integrated Part Load Value	IPLV.SI	kW/kW	6,612	6,804	7,029	6,703	6,782	6,505	6,997	6,946	7,131	7,302	7,308	
<b>Sound levels - standard unit</b>														
Sound power level <sup>(1)</sup>		dB(A)	99	99	102	102	102	102	102	105	105	105	105	105
Sound pressure level at 1 m <sup>(2)</sup>		dB(A)	82	82	84	84	84	83	83	86	86	86	86	86
<b>Sound levels - standard unit + low noise level option</b>														
Sound power level <sup>(1)</sup>		dB(A)	96	96	100	100	100	99	99	103	103	103	103	103
Sound pressure level at 1 m <sup>(2)</sup>		dB(A)	78	78	82	82	82	80	80	84	84	84	84	84
<b>Dimensions</b>														
Length		mm	3059	3059	3290	3290	3290	4730	4730	4730	4730	4832	4832	4832
Width		mm	936	936	1105	1105	1105	1039	1039	1202	1202	2174	2174	2174
Height		mm	1743	1743	1970	1970	1970	1997	1997	2071	2071	1585	1585	1585
<b>Operating weight<sup>(3)</sup></b>		kg	2981	3020	4072	4117	4145	6872	6950	7721	8059	11225	11279	11279
<b>Compressors</b>														
Semi-hermetic screw compressors, 50 r/s														
Circuit A			1	1	1	1	1	1	1	1	1	1	1	1
Circuit B			-	-	-	-	-	1	1	1	1	1	1	1

\* In accordance with standard EN14511-3:2018.

\*\* In accordance with standard EN14825:2016, average climate

HW1 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. kW

HW2 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 40°C/45°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. kW

HW3 Heating mode conditions: Evaporator entering/leaving water temperature 10°C/7°C, condenser entering/leaving water temperature 47°C/55°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. kW

CW1 Cooling mode conditions: Evaporator water entering/leaving temperature 12°C/7°C, condenser entering/leaving water temperature 30°C/35°C, evaporator and condenser fouling factor 0 m<sup>2</sup>. kW

η<sub>s heat 30/35°C</sub> & SCOP<sub>30/35°C</sub> Values calculated in accordance with EN14825:2016

η<sub>s heat 47/55°C</sub> & SCOP<sub>47/55°C</sub> Values calculated in accordance with EN14825:2016

η<sub>s cool 12/7°C</sub> & SEER<sub>12/7°C</sub> **Bold values compliant to Ecodesign regulation: (EU) No 2016/2281 for Comfort application**

SEPR<sub>12/7°C</sub> Values calculated in accordance with EN14825:2016

IPLV.SI Calculations according to standard performances AHRI 551-591 (SI).

(1) In dB ref=10<sup>-12</sup> W, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). Measured in accordance with ISO 9614-1 and certified by Eurovent.

(2) In dB ref 20μPa, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3dB(A)). For information, calculated from the sound power level Lw(A).

(3) Weight shown is guideline only. Please refer to the unit nameplate



Eurovent certified values



AHRI certified values  
30XW-only

## TECHNICAL CHARACTERISTICS

### HIGH EFFICIENCY UNITS FOR HIGH CONDENSING TEMPERATURES



LW HE + high condensing option		1328	1528	1928	2128	2328	2628	3028	3428	3828	4228	4628
<b>Refrigerant<sup>(3)</sup></b>		R-134a										
Circuit A	kg	130	130	180	175	177	120	120	130	130	240	250
	teqCO <sub>2</sub>	186	186	257	250	253	172	172	186	186	343	358
Circuit B	kg	-	-	-	-	-	120	120	150	130	240	250
	teqCO <sub>2</sub>	-	-	-	-	-	172	172	215	186	343	358
<b>Oil</b>												
Circuit A	l	32	32	36	36	36	32	32	36	36	36	36
<b>Capacity control</b>		Connect'Touch, electronic expansion valves (EXV)										
Minimum capacity <sup>(4)</sup>	%	30	30	20	20	20	15	15	15	10	10	10
<b>Evaporator</b>		Multi-pipe flooded type										
Net water volume	l	101	101	154	154	154	293	293	321	321	473	473
Water connections (Victaulic)	in	6	6	8	8	8	8	8	8	8	10	10
Drain and vent connections (NPT)	in	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Max. water-side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
<b>Condenser</b>		Multi-pipe flooded type										
Net water volume	l	103	103	148	148	148	316	316	340	340	623	623
Water connections (Victaulic)	in	6	6	8	8	8	8	8	10	10	10	10
Drain and vent connections (NPT)	in	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Max. water-side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

(4) Minimum unit capacity corresponds to a physical state of the unit and is given for indication only. The actual capacity at this stage depends on operating conditions.



## ELECTRICAL DATA NOTES

### STANDARD UNITS FOR HIGH CONDENSING TEMPERATURES

LW ST		708	858	1008	1300	1302	1500	1508	1900	2100	2300	2308	2800	3000	3008	3400	3800	4200	4600	4408	4608
<b>Power circuit</b>																					
Nominal voltage	V-ph-Hz	400-3-50																			
Voltage range	V	360-440																			
<b>Control circuit</b>																					
24 V via the built-in transformer																					
<b>Nominal start-up current<sup>(1)</sup></b>																					
Circuit A	A	303	388	388	587	587	587	587	772	772	772	772	587	587	587	772	772	772	772	772	772
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	587	587	587	587	772	772	772	772	772
Single power connection point option	A	-	-	-	-	-	-	-	-	-	-	-	757	757	757	943	965	986	1004	1004	1004
<b>Maximum start-up current<sup>(2)</sup></b>																					
Circuit A	A	303	388	388	587	587	587	587	772	772	772	772	587	587	587	772	772	772	772	772	772
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	587	587	587	587	772	772	772	772	772
Single power connection point option	A	-	-	-	-	-	-	-	-	-	-	-	887	887	887	1072	1172	1202	1232	1004	1232
<b>Cosine phi</b>																					
Nominal <sup>(3)</sup>		0,79	0,78	0,79	0,83	0,85	0,85	0,85	0,84	0,86	0,87	0,87	0,85	0,85	0,85	0,86	0,85	0,86	0,87	0,86	0,87
Maximum <sup>(4)</sup>		0,88	0,87	0,88	0,90	0,90	0,91	0,91	0,90	0,90	0,90	0,90	0,90	0,91	0,91	0,91	0,91	0,91	0,91	0,91	0,91
Total harmonic distortion <sup>(4)</sup>	%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Maximum power input*</b>																					
Circuit A	kW	97	111	122	156	173	191	191	249	268	286	286	191	191	191	252	252	271	290	290	290
Circuit B	kW	-	-	-	-	-	-	-	-	-	-	-	173	191	191	191	252	271	290	271	290
Single power connection point option	kW	-	-	-	-	-	-	-	-	-	-	-	364	382	382	443	504	542	580	562	580
<b>Nominal input current<sup>(3)</sup></b>																					
Circuit A	A	95	109	125	150	162	171	171	193	214	232	232	171	171	171	210	210	230	250	250	250
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	162	171	171	171	210	230	250	230	250
Single power connection point option	A	-	-	-	-	-	-	-	-	-	-	-	333	342	342	381	420	460	500	480	500
<b>Maximum input current (Un)*</b>																					
Circuit A	A	160	185	200	250	275	300	300	400	430	460	460	300	300	300	400	400	430	460	460	460
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	275	300	300	300	400	430	460	430	460
Single power connection point option	A	-	-	-	-	-	-	-	-	-	-	-	575	600	600	700	800	860	920	890	920
<b>Maximum input current (Un -10%)<sup>(4)</sup></b>																					
Circuit A	A	176	206	224	270	300	330	330	419	455	476	476	330	330	330	419	419	455	476	476	476
Circuit B	A	-	-	-	-	-	-	-	-	-	-	-	300	330	330	330	419	455	476	455	476
Single power connection point option	A	-	-	-	-	-	-	-	-	-	-	-	630	660	660	749	838	910	952	931	952

(1) Instantaneous start-up current (maximum operating current of the smallest compressor(s) + locked rotor current or reduced start-up current of the largest compressor). Values obtained at standard Eurovent unit operating conditions: evaporator entering/leaving water temperature = 12°C/7°C, condenser entering/leaving water temperature = 30°C/35°C.

(2) Instantaneous start-up current (maximum operating current of the smallest compressor(s) + locked rotor current or reduced start-up current of the largest compressor). Values obtained at operation with maximum unit power input.

(3) Values obtained at standard Eurovent unit operating conditions: evaporator entering/leaving water temperature = 12°C/7°C, condenser entering/leaving water temperature = 30°C/35°C.

(4) Values obtained at operation with maximum unit power input.

\* Values obtained in operation with maximum unit power input. Values given on the unit name plate.

## ELECTRICAL DATA NOTES

### HIGH EFFICIENCY UNITS FOR HIGH CONDENSING TEMPERATURES



LW HE		1328	1528	1928	2128	2328	2628	3028	3428	3828	4228	4628
<b>Power circuit</b>												
Nominal voltage	V-ph-Hz	400-3-50										
Voltage range	V	360-440										
<b>Control circuit</b>												
24 V via the built-in transformer												
<b>Nominal start-up current<sup>(1)</sup></b>												
Circuit A	A	587	587	772	772	772	587	587	772	772	772	772
Circuit B	A	-	-	-	-	-	587	587	587	772	772	772
Single power connection point option	A	-	-	-	-	-	749	757	943	965	986	1004
<b>Maximum start-up current<sup>(2)</sup></b>												
Circuit A	A	587	587	772	772	772	587	587	772	772	772	772
Circuit B	A	-	-	-	-	-	587	587	587	772	772	772
Single power connection point option	A	-	-	-	-	-	862	887	1072	1172	1202	1232
<b>Cosine phi</b>												
Nominal <sup>(3)</sup>		0,88	0,88	0,84	0,86	0,87	0,87	0,88	0,86	0,85	0,86	0,87
Maximum <sup>(4)</sup>		0,91	0,92	0,90	0,90	0,90	0,91	0,92	0,91	0,91	0,91	0,91
Total harmonic distortion <sup>(4)</sup>	%	0	0	0	0	0	0	0	0	0	0	0
<b>Maximum power input*</b>												
Circuit A	kW	173	191	252	271	290	173	191	252	252	271	290
Circuit B	kW	-	-	-	-	-	173	191	191	252	271	290
Single power connection point option	kW	-	-	-	-	-	346	382	443	504	542	580
<b>Nominal input current<sup>(3)</sup></b>												
Circuit A	A	162	171	210	230	250	162	171	210	210	230	250
Circuit B	A	-	-	-	-	-	162	171	171	210	230	250
Single power connection point option	A	-	-	-	-	-	324	342	381	420	460	500
<b>Maximum input current (Un)*</b>												
Circuit A	A	275	300	400	430	460	275	300	400	400	430	460
Circuit B	A	-	-	-	-	-	275	300	300	400	430	460
Single power connection point option	A	-	-	-	-	-	550	600	700	800	860	920
<b>Maximum input current (Un -10%)<sup>(4)</sup></b>												
Circuit A	A	300	330	419	455	476	300	330	419	419	455	476
Circuit B	A	-	-	-	-	-	300	330	330	419	455	476
Single power connection point option	A	-	-	-	-	-	600	660	749	838	910	952

(1) Instantaneous start-up current (maximum operating current of the smallest compressor(s) + locked rotor current or reduced start-up current of the largest compressor). Values obtained at standard Eurovent unit operating conditions: evaporator entering/leaving water temperature = 12°C/7°C, condenser entering/leaving water temperature = 30°C/35°C.

(2) Instantaneous start-up current (maximum operating current of the smallest compressor(s) + locked rotor current or reduced start-up current of the largest compressor). Values obtained at operation with maximum unit power input.

(3) Values obtained at standard Eurovent unit operating conditions: evaporator entering/leaving water temperature = 12°C/7°C, condenser entering/leaving water temperature = 30°C/35°C.

(4) Values obtained at operation with maximum unit power input.

\* Values obtained in operation with maximum unit power input. Values given on the unit name plate.

## ELECTRICAL DATA NOTES

### ■ Standard and high efficiency units

Notes, electrical data and operating conditions HYDROCIAT LW

- As standard:  
LW 708 to 2328 units have a single power connection point located immediately upstream of the main disconnect switch.  
HYDROCIAT LW 2800 to 4628 units have two connection points located immediately upstream of the main disconnect switches.
- The control box includes the following standard features:
  - one main disconnect switch per circuit<sup>(1)</sup>,
  - Starter and motor protection devices for each compressor
  - anti-short cycle protection devices<sup>(1)</sup>,
  - Control devices
- Field connections:  
All connections to the system and the electrical installations must be in full accordance with all applicable codes.
- The CIAT LW units are designed and built to ensure conformance with local codes. The recommendations of European standard EN 60204-1 (corresponds to IEC 60204-1) (machine safety - electrical machine components - part 1: general regulations) are specifically taken into account, when designing the electrical equipment.
- The absence of power supply disconnect switch(es) and short-cycle protection devices in option : Non disconnect switch, but short circuit protection, is an important factor that has to be taken into consideration at the installation site.  
Units equipped with one of these two options are supplied with a declaration of incorporation, as required by the machinery directive.

**Notes:**

- **Generally the recommendations of IEC 60364 are accepted as compliance with the requirements of the installation directives. Conformance with EN 60204-1 is the best means of ensuring compliance with the Machines Directive.**
- **Annex B of EN 60204 1 describes the electrical characteristics used for the operation of the machines.**

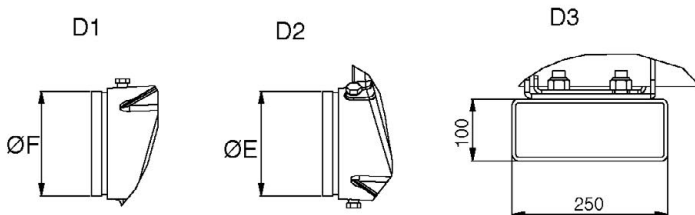
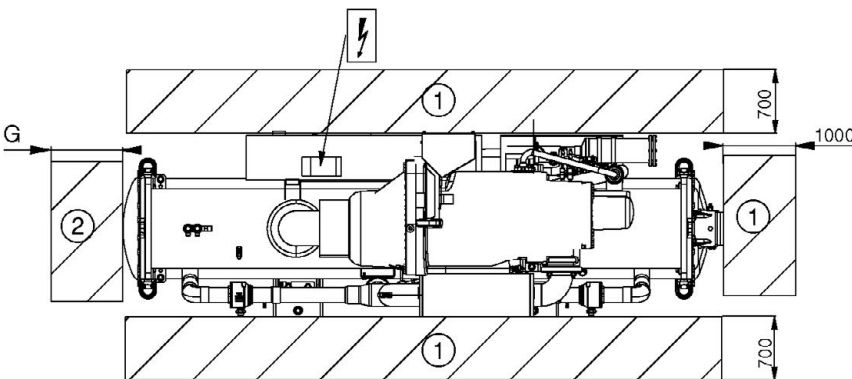
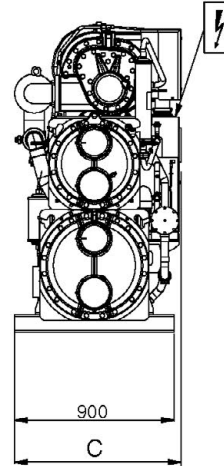
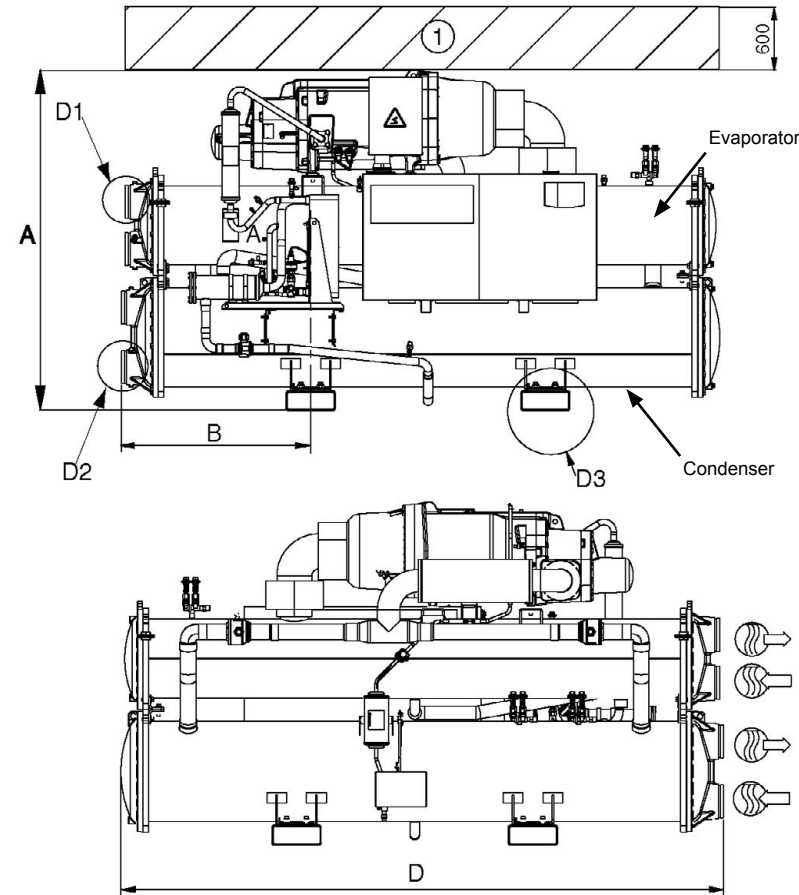
1. The operating environment for the HYDROCIAT LW units is specified below:
  - Environment(2): Environment as classified in EN 60721 (corresponds to IEC 60721):
    - indoor installation
    - ambient temperature range: minimum temperature +5°C to +42°C, class AA4
    - altitude: lower than or equal to 2000 m
    - presence of water: class AD2 (possibility of water droplets)
    - presence of hard solids, class 4S2 (no significant dust present)
    - presence of corrosive and polluting substances, class 4C2 (negligible)
2. Power supply frequency variation:  $\pm 2$  Hz.
3. The neutral (N) line must not be connected directly to the unit (if necessary use a transformer).
4. Overcurrent protection of the power supply conductors is not provided with the unit.
5. The factory installed disconnect switch(es)/circuit breaker(s) is (are) of a type suitable for power interruption in accordance with EN 60947-3 (corresponds to IEC 60947-3).
6. The units are designed for connection to TN networks (IEC 60364). For IT networks the earth connection must not be at the network earth. Provide a local earth, consult competent local organisations to complete the electrical installation.

**NOTE: If particular aspects of an actual installation do not conform to the conditions described above, or if there are other conditions which should be considered, always contact your local CIAT representative.**

- (1) Not provided for units equipped with no disconnect switch but short circuit protection option.
- (2) The required protection level for this class is IP21B or 1PX1B (according to reference document IEC 60529). All HYDROCIAT LW units fulfil this protection condition. In general the casings fulfil class IP23 or IPX3B.

## DIMENSIONS

- LW ST - 708-2308
- LW HE - 1328-2328



Units sizes	Dimensions in mm						
	A	B	C	D	E	F	G
<b>LW ST standard units</b>							
708	1567	800	928	2724	141,3	141,3	2600
858	1567	800	928	2724	141,3	141,3	2600
1008	1567	800	928	2724	141,3	141,3	2600
1300	1693	810	936	2742	141,3	141,3	2600
1302	1693	810	936	2742	141,3	141,3	2600
1500	1693	810	936	2742	141,3	141,3	2600
1508	1693	810	936	2742	141,3	141,3	2600
1900	1848	968	1044	3059	168,3	168,3	2800
2100	1848	968	1044	3059	168,3	168,3	2800
2300	1848	968	1044	3059	168,3	168,3	2800
2308	1898	828	1044	2780	219,1	168,3	2600
<b>LW HE high efficiency units</b>							
1328	1743	968	936	3059	168,3	168,3	2800
1528	1743	968	936	3059	168,3	168,3	2800
1928	1950	1083	1065	3290	219,1	219,1	3100
2128	1950	1083	1070	3290	219,1	219,1	3100
2328	1950	1083	1070	3290	219,1	219,1	3100
<b>LW ST with high condensing option</b>							
708	1567	800	928	2724	141,3	141,3	2600
858	1567	800	928	2724	141,3	141,3	2600
1008	1567	800	928	2724	141,3	141,3	2600
1300	1693	810	936	2742	141,3	141,3	2600
1302	1693	810	936	2742	141,3	141,3	2600
1500	1693	810	936	2742	141,3	141,3	2600
1508	1693	810	936	2742	141,3	141,3	2600
1900	1868	968	1090	3059	168,3	168,3	2800
2100	1868	968	1090	3059	168,3	168,3	2800
2300	1868	968	1090	3059	168,3	168,3	2800
2308	1920	828	1090	2780	168,3	219,1	2600
<b>LW HE with high condensing option</b>							
1328	1743	968	936	3059	168,3	168,3	2800
1528	1743	968	936	3059	168,3	168,3	2800
1928	1970	1083	1105	3290	219,1	219,1	3100
2128	1970	1083	1105	3290	219,1	219,1	3100
2328	1970	1083	1105	3290	219,1	219,1	3100

**Key:**

All dimensions are in mm.

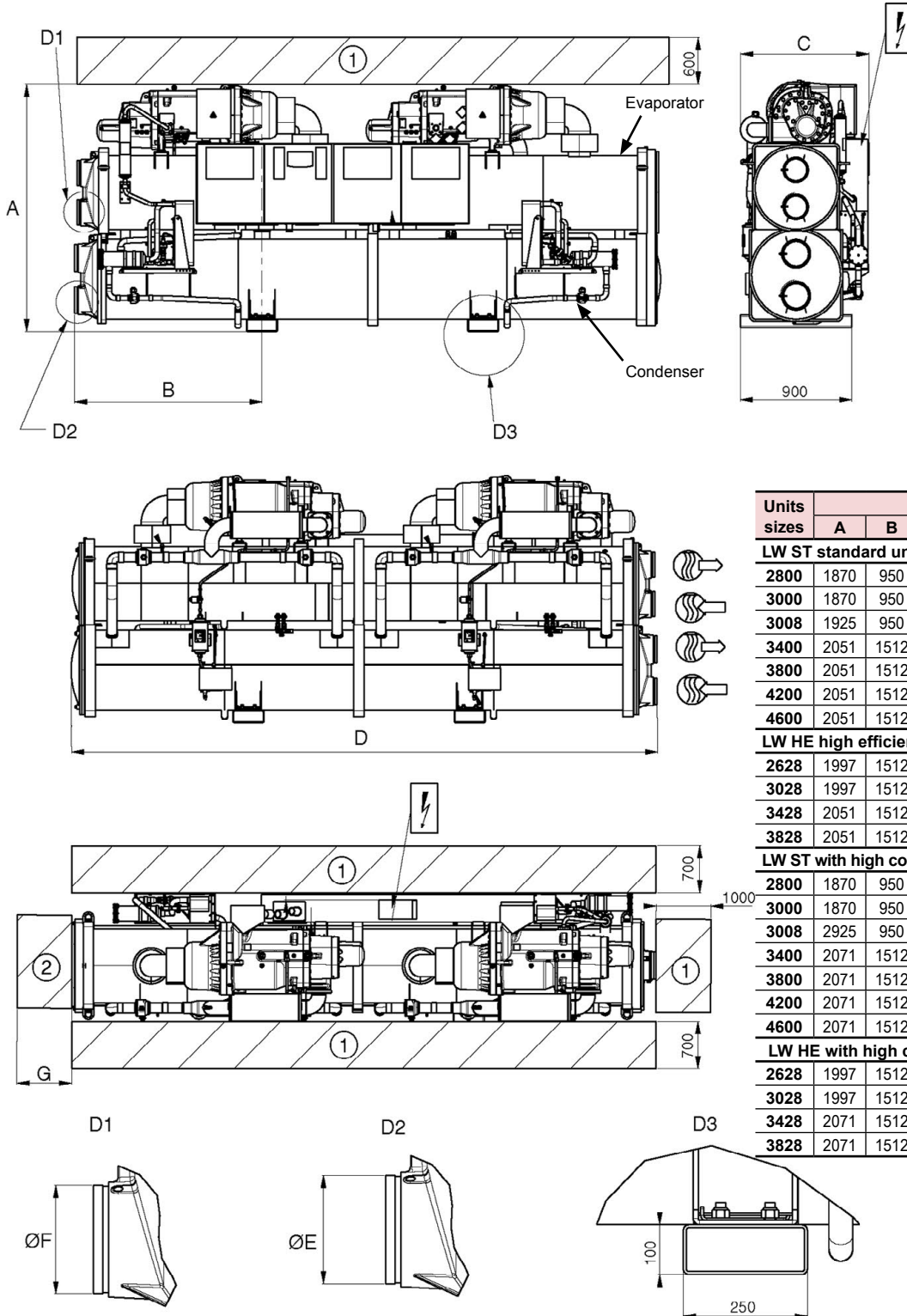
- ① Required clearance for maintenance
- ② Recommended clearance for tube removal
- Water inlet
- Water outlet
- Electrical cabinet

- Low brine option has same dimensions as high condensing option.
- IP44 option has same dimensions as high condensing option on units 1900, 1928, 2300, 2308, 2328. IP44 option has same dimensions as standard on the other units.

NOTE: Drawings are not contractually binding. Before designing an installation, consult the certified dimensional drawings, available on request.

## DIMENSIONS

- LW ST - 2800-4600
- LW HE - 2628-3828



Units sizes	Dimensions in mm						
	A	B	C	D	E	F	G
<b>LW ST standard units</b>							
2800	1870	950	1036	4025	219,1	168,3	3800
3000	1870	950	1036	4025	219,1	168,3	3800
3008	1925	950	1036	4025	219,1	219,1	3800
3400	2051	1512	1162	4730	219,1	219,1	4500
3800	2051	1512	1162	4730	219,1	219,1	4500
4200	2051	1512	1162	4730	219,1	219,1	4500
4600	2051	1512	1162	4730	219,1	219,1	4500
<b>LW HE high efficiency units</b>							
2628	1997	1512	1039	4730	219,1	219,1	4500
3028	1997	1512	1039	4730	219,1	219,1	4500
3428	2051	1512	1162	4730	219,1	219,1	4500
3828	2051	1512	1162	4730	219,1	219,1	4500
<b>LW ST with high condensing option</b>							
2800	1870	950	1036	4025	219,1	168,3	3800
3000	1870	950	1036	4025	219,1	168,3	3800
3008	2925	950	1036	4025	219,1	219,1	3800
3400	2071	1512	1202	4730	219,1	219,1	4500
3800	2071	1512	1202	4730	219,1	219,1	4500
4200	2071	1512	1202	4730	219,1	219,1	4500
4600	2071	1512	1202	4730	219,1	219,1	4500
<b>LW HE with high condensing option</b>							
2628	1997	1512	1039	4730	219,1	219,1	4500
3028	1997	1512	1039	4730	219,1	219,1	4500
3428	2071	1512	1202	4730	219,1	219,1	4500
3828	2071	1512	1202	4730	219,1	219,1	4500

**Key:**

All dimensions are in mm.

- ① Required clearance for maintenance
- ② Recommended clearance for tube removal
- Water inlet
- Water outlet
- Electrical cabinet

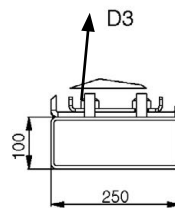
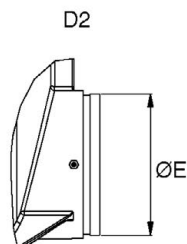
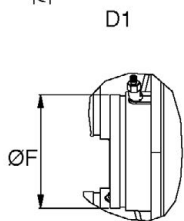
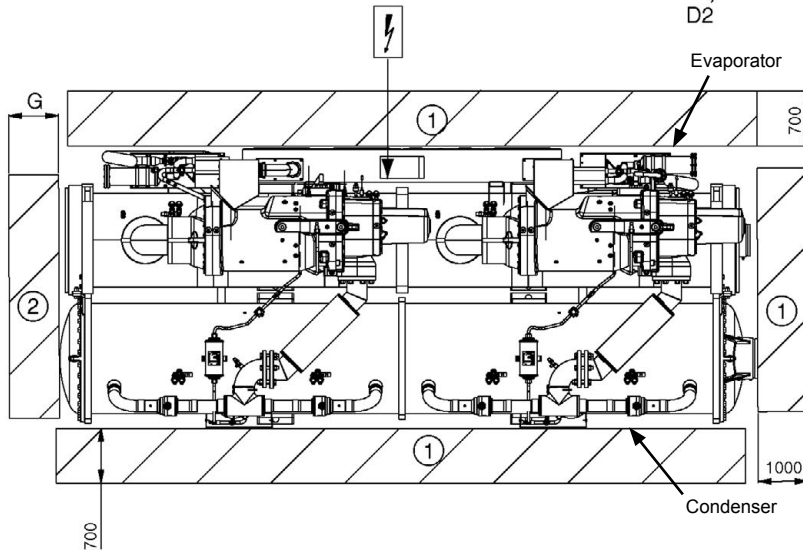
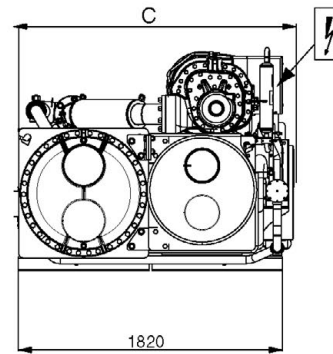
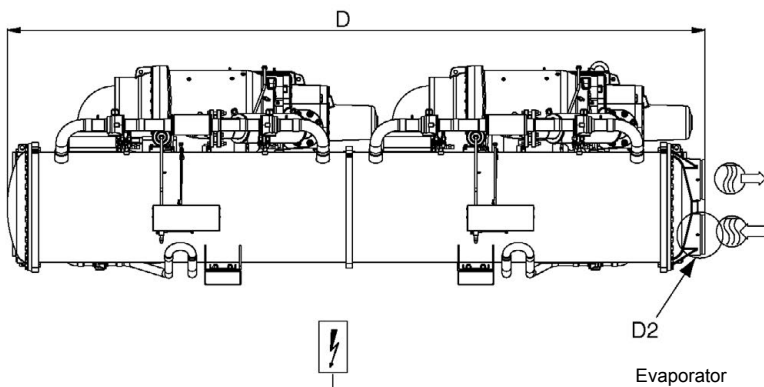
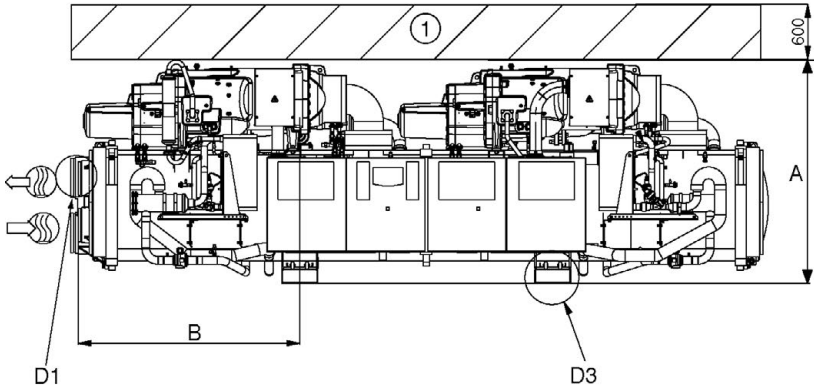
- Low brine option has same dimensions as high condensing option.
- IP44 option has same dimensions as high condensing option on units 1900, 1928, 2300, 2308, 2328. IP44 option has same dimensions as standard on the other units.

**NOTE:** Drawings are not contractually binding. Before designing an installation, consult the certified dimensional drawings, available on request.



## DIMENSIONS

- LW ST - 4408-4608
- LW HE - 4228-4628



Units sizes	Dimensions in mm						
	A	B	C	D	E	F	G
<b>LW ST standard units</b>							
4408	1515	1568	1902	4790	219,1	219,1	4500
4608	1515	1568	1902	4790	219,1	219,1	4500
<b>LW HE high efficiency units</b>							
4228	1562	1591	2129	4832	273	273	4600
4628	1562	1591	2129	4832	273	273	4600
<b>LW ST with high condensing option</b>							
4408	1535	1568	1947	4790	219	219	4500
4608	1535	1568	1947	4790	219	219	4500
<b>LW HE with high condensing option</b>							
4228	1585	1591	2174	4832	273,1	273,1	4600
4628	1585	1591	2174	4832	273,1	273,1	4600

**Key:**

All dimensions are in mm.

① Required clearance for maintenance

② Recommended clearance for tube removal

Water inlet

Water outlet

Electrical cabinet

- Low brine option has same dimensions as high condensing option.
- IP44 option has same dimensions as high condensing option on units 1900, 1928, 2300, 2308, 2328. IP44 option has same dimensions as standard on the other units.

**NOTE:** Drawings are not contractually binding. Before designing an installation, consult the certified dimensional drawings, available on request.