

# OXFORD

Chillers and heat pumps Air/water 41÷125 kW



## General

Air/Water chillers and heat pumps with axial fans and hermetic scroll compressors.

## Versions

A: Energy efficient class A

HP: Reversible heating

LE: Without evaporator, for connection to external

DS: Desuperheater

DC: Heat exchange condenser

FC: Free-cooling (see specific catalogue document)

LN: Low sound

SLN: Super low sound

## Quick facts

- ▶ Eco-friendly cooling
- ▶ A customized range
- ▶ High EER
- ▶ Patented innovation
- ▶ Efficient energy performance
- ▶ Advanced software
- ▶ Years of dependability
- ▶ Low discharge fluid temperature

**Swegon**

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## TECHNICAL FEATURES

### OXFORD

Air cooled water chiller with hermetic scroll compressors and brazed plate evaporators. Basic unit outfit.

### STRUCTURE

Self supporting frame and removable panels lined with noise-absorbent expanded polyurethane matting in galvanised steel sheet painted in RAL 7035 with polyester powder at 180 °C, to offer high weather resistance. Screws and bolts in Stainless Steel.

### COMPRESSORS

Parallel connected hermetic rotary screw scroll type compressors with oil level gauge, klixon thermal protection and oil equalization system. Enclosed in an insulated compartment and separated from the air flow, the compressors are accessible through the special panels for maintenance operations, even when the unit is on.

### CONDENSERS

The heat exchanger is composed of an aluminium-finned copper-tube multi-row coil, of high efficiency.

The finned coil pack is protected by a metal mesh.

### ELECTRO FANS

Axial fans designed to enhance performance and reduce noise emissions, driven directly by a 6-pole electric motor with integrated klixon thermal protection. Motor protection degree is IP 54. The fan is fitted with a protection grille in compliance with UNI EN 294.

### EVAPORATOR

Plate type heat exchanger in AISI 316 stainless steel covered with closed-cell foam.

Each evaporator is equipped with temperature probe for anti-freeze protection and vane operated flow switch supplied as standard.

The plate heat exchangers provide for:

- Increased COP/EER;
- Reduced refrigerant charge;
- Reduced volume and weight of the unit;
- Easier maintenance.

### COOLING CIRCUIT

Comprises: fluid valve, feeding plug, fluid sight glass, dehydrating filter, thermostatic expansion valve for pressure external control, high and low pressure switches and safety valve.

### ELECTRICAL PANEL

The panel consists of:

- Main disconnect switch;
- Fuses for main and auxilliary power circuit protection ;
- Magnetothermic switches, pumps (if present);
- Compressor remote switches;
- Fan remote switches ;
- Pump remote switches (for ST version)

- Microprocessor to control the following functions:
  - Control of ingoing water temperature;
  - Anti-freeze protection;
  - Compressor operation timers;
  - Automatic rotation of compressor start-up sequence;
  - Alarm signals;
  - Alarm reset;
  - Capacity steps;
  - Cumulative alarm contact for remote signaling;
  - Forced capacity reduction according to pressure limits;
- Display of:
  - Ingoing and outgoing water temperature;
  - Currently set temperature and differential;
  - Alarm description;
  - Hour counter for compressor operation;
- black box function;
  - Power supply [V/f/Hz]: 400/3~/50 ±5%.

### CONTROL AND SAFETY DEVICES

- cooled water temperature control probe (on evaporator intake);
- anti-freeze probe on evaporator outtake;
- manual reset high pressure controller;
- controlled manual reset low pressure switch;
- high pressure safety valve;
- compressor overtemperature protection;
- fan overtemperature protection;
- vane actuated mechanical flow switch (supplied as standard)

### TESTING

The units are factory-tested and supplied complete with oil and refrigerant.

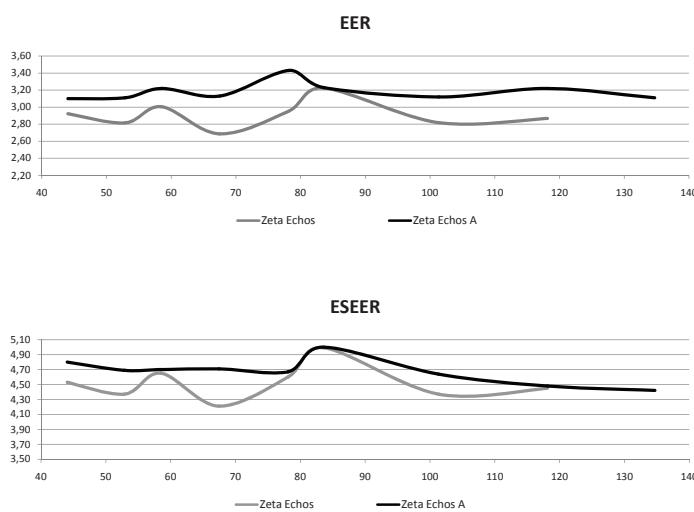
### VERSIONS

Check the table with the available configurations for any interferences between one option and the other.

### OXFORD A:

#### high performance unit

OXFORD Class A carries the hallmark of energy-saving thanks to an EER of the chiller operation always greater than 3.1! There are 9 sizes available, with a capacity range from 44 to 135 kW, classified in full compliance with the regulations set by EUROVENT as high energy efficiency class. The diagram below describes the increase of energy efficiency of the OXFORD range, at 100% charge (EER) and partial charge (ESEER), according to the EUROVENT provisions.



## OXFORD /HP:

reversible heat pump

Beside the basic version components, the unit comprises:

- 4-way reversing valve;
- fluid collector;
- a second thermostatic valve;
- solenoid valve on fluid line;
- enablement of summer/winter mode switching and automatic defrosting via microprocessor, with a Blue Box patented logic, which ensures optimal activation and duration of defrosting operations.

## OXFORD /LE:

motocondensing unit

In addition to the basic version, this unit has no evaporator and thermostatic valve fitted.. The fluid receptors can be supplied as accessories. The solenoid valve on the fluid line is supplied as standard. The unit is supplied without refrigerant charge.

## OXFORD /LE /HP:

heat pump motocondensing unit

In addition to the basic version OXFORD/HP, this unit has no evaporator and thermostatic valves fitted. The solenoid valve on the fluid line is supplied as standard. The unit is supplied without refrigerant charge.

## HYDRAULIC SYSTEM OPTIONS

### OXFORD /ST 2PS

unit with pumps and tank

Beside the basic version components, the unit comprises:

- insulated storage tank;
- two circulation pumps of which one in stand-by mode, with automatic switch in case of failure;
- expansion vessel;
- check valve;
- gate valves.

The ST version is available in four additional configurations:

- ST 1PS: unit with pump and tank;
- ST 1P: unit with single pump without tank;
- ST 2P: with 2 pumps without tanks;
- ST S: with tank without pumps.

## ACCESSORY VERSIONS

### OXFORD /DC

unit with recovery condenser

Beside the basic version components, the unit comprises a recovery condenser on each cooling circuit (recovering 100% of the condensing heat for the production of hot water) and a fluid receptor. The condenser is brazed plate type. The accessory is available for sizes from 3.2-13.2 "1p-2p" and for all models without hydraulic module; is not available for the HP models. The control automatically enables the recovery function, depending on water temperature, and controls its safety desablement in case of high pressure. For maximum benefit use the accessory combined with the circuit regulator. The accessory is available for all models. It is not available for the HP version.

### OXFORD /DS

unit with desuperheater

Beside the basic version components, the unit comprises a brazed plate recovery condenser on each cooling circuit (recovering 20 % of the condensate, connected in series with the condenser coil). The accessory is available for models from 3.2 to 13.2 with "1P-2P" and for all models without hydraulic module.

For maximum benefit use the accessory combined with the circuit regulator.

This version is also available for HP outfit. In this case, the system must be equipped with a shut-off valve on the water recovery line during the HP mode operation, as shown in the manual.

### OXFORD /LN

low-noise unit

In addition to the basic version components, this unit has a fully soundproofed compressor compartment (using high acoustic impedance and sound-absorbent materials).

### OXFORD /SLN

super low-noise unit

beside the /LN version components, the coil surface is larger, fans have reduced speed and a turn regulator.

## ACCESSORIES

### REFRIGERANT CIRCUIT ACCESSORIES

- Electronic thermostatic valve;
- Condensing pressure controlled by operation circuit regulator with low external temperatures;
- Double set point (high/low temperature) with a single electronic expansion valve. The evaporator is sized according to

high temperature operation. The set point can be changed from the keyboard or the digital input, in this case must be specified in the order;

- High and low pressure switches are available for all models;
- Fluid receptors (supplied as standard for HP, HP/LE and DC, DC/LE versions);
- Intake and delivery valves on compressor line;
- Solenoid valve on fluid line (supplied as standard for HP and HP/LE and LE versions);
- Low water temperature kit.

## **HYDRAULIC CIRCUIT ACCESSORIES**

- Defroster for the evaporator (the ST version is equipped with an antifreeze resistance on the tank, piping system and on the pump spiral, which is insulated for this reason) and on any recovery heat exchanger;
- Water side safety valve (ST version only). The valve calibration value is 6 bar, which corresponds to the maximum allowed operating pressure.

## **ELECTRICAL ACCESSORIES**

- Serial interface RS485 suited for Carel and Modbus protocols;
- Power factor correction  $\cos\phi \geq 0.9$  under nominal operating conditions; on the external board in IP 55 (power supply connected by the installer directly on the main). The accessory is combined with dry contacts;
- Remote user terminal (in addition to the standard one);
- Dry contacts.

## **MISCELLANEOUS ACCESSORIES**

- Rubber antivibration mounts;
- Copper/copper condensation coil;
- Copper/tinned-copper condensation coil;
- Preprinted aluminium condensation coil;
- Condensation coil with passivated aluminium and polyurethane coating. The treatment consists of a double layer, the first of which passivates the aluminium and acts as a primer and the second which is a polyurethane-based surface coating. The product has high anti-corrosive properties and virtually resists to all environmental conditions. For installation in marine and rural environments, from industrial to urban areas;
- Packaging in wooden crates;
- Special pallet/skid for container shipment;
- Non-standard "RAL" paint colours.

## **DOUBLE SET-POINT**

The microprocessor enables you to set two set temperatures for the production of cold and hot water. Unless specified otherwise in the order, the default values are 12/7 °C and 15/10 °C for chiller mode and 40/45 °C and 35/40 °C for heat pump mode. The set temperatures must, in any case, remain within the operating ranges of the unit.

Use either the keypad or the digital input to switch between the first and second set. For series that do not permit the simultaneous selection of "Select summer/winter mode with

digital input" and "Double set point with digital input", summer/winter mode can be selected only on the keypad while the double set point still uses the digital input, as per our standard.

## **EC FANS**

Units can be coupled to the innovative direct current EC axial fans with electronically commutated brushless motor.

These motors with permanent magnets rotor ensure a high level of efficiency for all work conditions and allow to obtain a 15% saving per fan.

Moreover, through a 0-10V analogical signal sent to every fan, the microprocessor allows to control the condensation through continuous air flow regulations on variation of the outdoor air temperature and a consequent sound emission reduction

## **"BRINE KIT" ACCESSORY**

It is applied if the evaporator output temperature is included within +3°C and -8°C. It consists in a higher thermal insulation of the exchanger and piping, a specific calibration of the low pressure switches and of the anti-freeze alarm, and dimensioning check of the mechanical thermostatic valve.

If it is not included in the set-up, the "Check condensation" accessory must be added.

## **ELECTRONIC THERMOSTATIC VALVE**

The use of this accessory is particularly indicated for units that operate in very unstable heat load conditions or in unstable functional mode, as in the case of joint management of air conditioning and production of high temperature water. Use of the electronic thermostatic valve in fact allows to:

- maximise the heat exchange to the evaporator
- minimise response times on load variation and on operative conditions
- optimise the regulation of the over-heating
- guarantee maximum energy efficiency

## **SELF-ADAPTABLE REGULATION LOGIC**

This function allows the unit control to dynamically vary the outlet water set point according to the stop and functional cycles of the machine: in practice, by increasing and reducing the water outlet temperature, the control avoids that compressor start-ups are too close in time, decreasing the number of peaks and protecting the unit components

## **SOFT-STARTER**

Blue Box units adopt all the required functioning set-ups and logics to minimise peak currents. The Soft-Start accessory allows a further 40% reduction of normal current peaks, through an electronic control of the electric motor start-up.

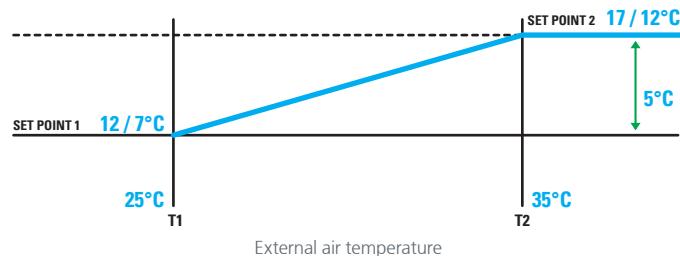
## **COMPENSATION OF THE SET-POINT to the external air temperature**

The unit microprocessor control can compensate the set point in a dynamic way, on variation of the external air temperature. The compensation can be positive or negative: with positive compensation, on increase of the air temperature the functioning set also increases. With negative compensation on increase of the air temperature the set decreases. Compensation

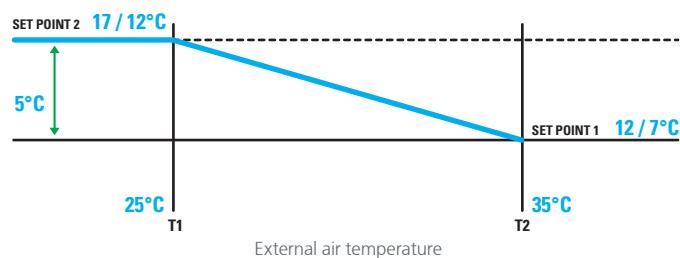
can be made either on the summer set point or on the winter set point (heat pumps).

By default, both summer and winter negative compensation is set, but this configuration can be modified from the microprocessor keyboard. Unless otherwise specified, default values are indicated in the graphics below.

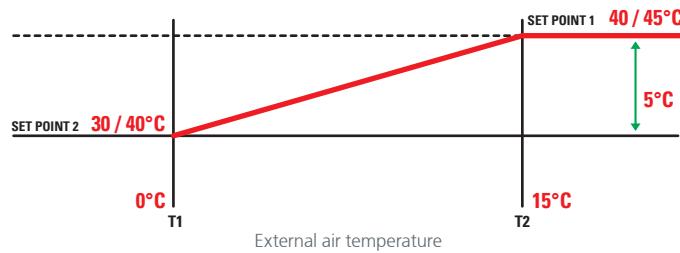
SUMMER COMPENSATION-POSITIVE



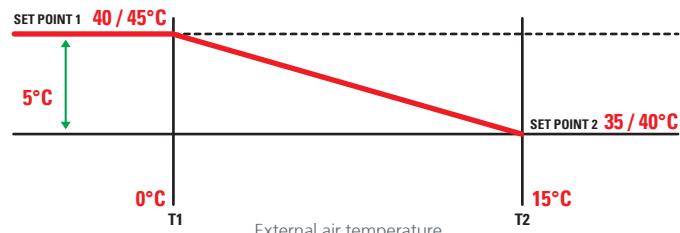
SUMMER COMPENSATION-NEGATIVE



WINTER COMPENSATION-POSITIVE



WINTER COMPENSATION-NEGATIVE



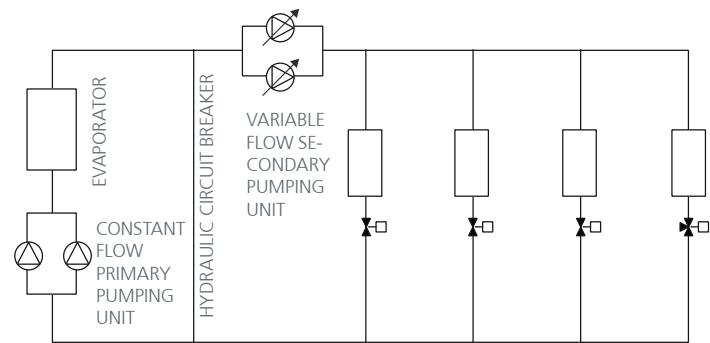
## INVERTER DRIVEN PUMP (PER ST1P/S O ST2P/S)

### Energy savings:

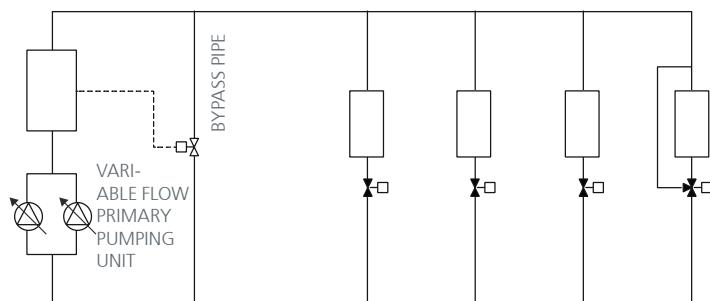
Variable flow pumps have become more widespread over the years to optimise air conditioning and cooling systems. Thanks to the Inverter Driven Pump, Blue Box offers an alternative method that differs from conventional layouts: a constant flow primary pump and a variable flow secondary pump

Let's compare the two solutions:

- 1) The figure below shows the layout of a constant flow primary pump and a variable flow secondary pump. Please note the use of the decoupling pipe between the primary and secondary system (designed to cover the entire flow rate): if the utilities only require a percentage of the nominal power, the decoupling pipe recirculates the excess flow, which means wasting pumping energy.



The figure below shows a system with only variable flow primary pumps, which also serve the secondary system. The bypass pipe and the two-way control valve ensure minimum water flow through the evaporator when the request is below the allowed minimum water flow limit to guarantee a correct heat exchange for the evaporator. The pipe and the two-way control valve are designed for a much lower water flow rate than the nominal one. This allows to considerably reduce energy losses related to the mixing process, which in traditional systems are caused by the hydraulic circuit breaker.



Benefits of the Inverter Driven Pump:

Saving a set of pumps

Reduced overall dimensions of the machines' housings

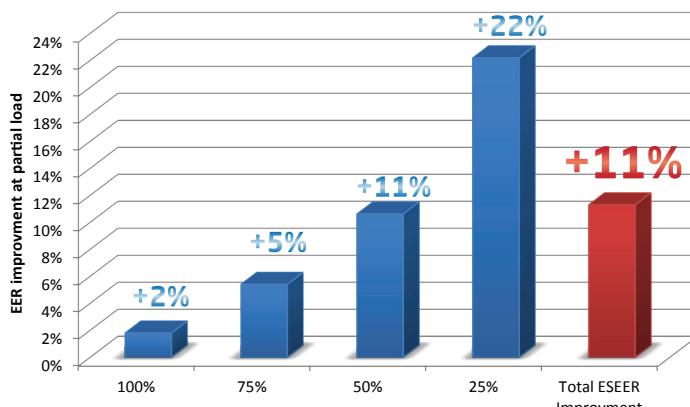
Lower piping costs

Reduced pressure drops

Greater energy efficiency on the pump side

As we can see from the graph under EUROVENT conditions,

the systems in the diagrams have higher efficiency under part-load conditions, considering the energy consumed by the pumps as well as by the chiller (compressors plus fans)

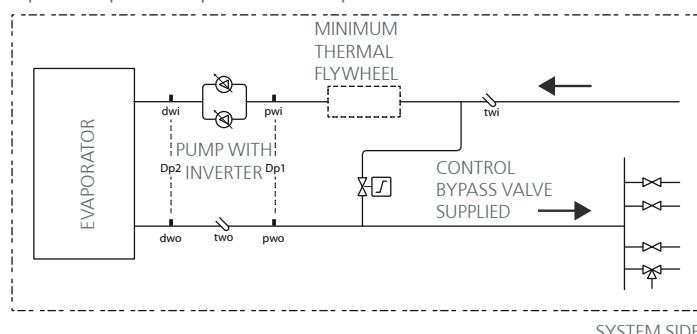


Energy savings in these conditions can be as high as 11% per year and sometimes even more!

### Inverter Driven Pump operating logic:

Dp1: System side pressure drops

Dp2: Evaporator pressure drops



When all the utilities are in operation, the unit's pump runs at the nominal flow rate and with an available head on the system side equal to Dp1 and evaporator pressure drops equal to Dp2.

The system's heat load drop causes the shut-off valves of the utilities to close, which results in an increase in the pressure drops that the pump needs to overcome. At the same time, the inverter's control logic will reduce the flow rate, which will determine lower evaporator pressure drops and bring back the available head to the nominal Dp1 value.

### Key points for a variable flow primary system:

In order for the components of the system to operate optimally, it is important to take some key points into account:

#### 1) Minimum water flow and bypass valve supplied:

The Inverter Driven Pump also includes the two-way bypass valve supplied with it and adequately designed in relation to the size of the unit.

If on the system side the heat load is very low, this means that many utilities are closed, which results in an increase in pressure drops. The inverter counters the Dp1 variation detected by the sensor by reducing the speed of the pump and the flow

rate as a result. However, there is a limit lower than the flow rate value below which the heat exchange towards the evaporator is not performed properly and the temperature drop processed by the evaporator increases, which might activate the anti-freeze alarm. The two-way control valve adequately selected based on the machine model prevents this alarm from being triggered, thereby ensuring the minimum water flow rate towards the evaporator.

#### 2) "Minimum thermal flywheel":

In the event of a heat load close to zero, with the unit in maximum power partialisation conditions, the pump set at the minimum flow rate and closed system valves, the machine might stop due to the anti-freeze alarm.

To prevent this problem, there must be a "minimum thermal flywheel" in the evaporator / bypass valve section.

Below is the formula to determine it:

$$Vol = \frac{P_0 * k}{N} [l]$$

$P_0$  Machine overall chilling power [kW]

$N$ : Inverse of the unit's minimum partialisation

k : parameter [l/kW]

| Scroll compressors | 2    | 3  | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 12   |
|--------------------|------|----|------|------|------|------|------|------|------|------|
| k [l/kW]           | 17.4 | 13 | 13.9 | 17.4 | 16.3 | 15.3 | 14.8 | 14.6 | 13.9 | 13.4 |
| N                  | 2    | 3  | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 12   |

The water content of the evaporator, of the hydraulic module's inertial tank (if there is one) and of the pipes between the bypass and the evaporator itself may contribute to determine the "minimum thermal flywheel".

However, it is advisable to use three-way valves on a certain number of utilities on the system to ensure a minimum flow of water towards the system in any condition.

Please note: if this accessory is installed, the minimum cold water temperature at the outlet cannot drop below 7°C. Moreover, the temperature variation considered under the conditions specified in the project must be 5°C. Please contact our sales department for the minimum water temperature at the outlet (production of cold water) and for different temperature drop values.

You should also contact the sales department in the event of production of hot water for water temperatures at the outlet below 40°C.

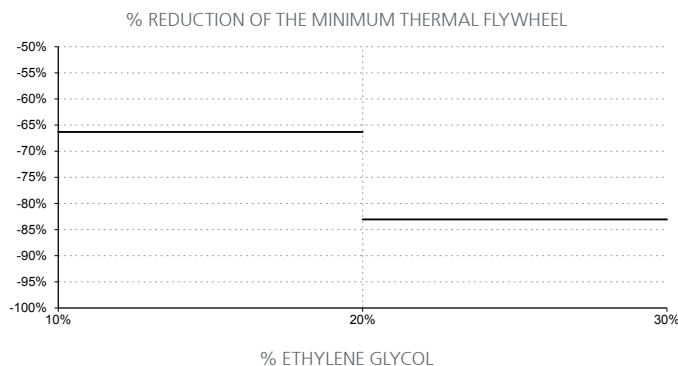
Attention: the "minimum thermal flywheel" must be between the bypass valve and the evaporator. This is a part of the "minimum water content of the system" described in the relative chapter; the difference between the "minimum water content of the system" and the "minimum thermal flywheel" can instead be positioned in any area of the system.

The "minimum thermal flywheel" allows the unit to operate correctly also in heat pump mode.

For cooling-only machines, if using ethylene glycol mixes, it is possible to reduce the "minimum thermal flywheel" based on

the curves below

For scroll compressors:



If the unit is in heat pump mode, the “minimum thermal flywheel” is not reduced even if there is glycol.

**OXFORD - TECHNICAL DATA**

| UNIT SIZE                                   |            | 3.2      | 4.2      | 5.2         | 6.2      | 7.2      |
|---|------------|----------|----------|-------------|----------|----------|
| <b>Cooling (Gross values)</b>               |            |          |          |             |          |          |
| Nominal cooling capacity                    | (1) kW     | 40,9     | 45,9     | 51,8        | 60,4     | 66,8     |
| Total power input for cooling               | (1),(2) kW | 13,6     | 15,7     | 18,4        | 20,1     | 24,9     |
| EER   | (1)        | 3,01     | 2,92     | 2,82        | 3,00     | 2,69     |
| ESEER                                       |            | 4,67     | 4,53     | 4,37        | 4,65     | 4,21     |
| Efficiency class                            |            | B        | B        | C           | B        | D        |
| <b>Cooling (EN 14511 values)</b>            |            |          |          |             |          |          |
| Nominal cooling capacity                    | (1),(8) kW | 40,5     | 45,5     | 51,4        | 60,0     | 66,4     |
| EER   | (1),(8)    | 2,90     | 2,83     | 2,74        | 2,92     | 2,64     |
| ESEER                                       | (8)        | 4,24     | 4,14     | 4,00        | 4,26     | 4,01     |
| Efficiency class                            |            | C        | C        | C           | B        | D        |
| <b>Heating (Gross values)</b>               |            |          |          |             |          |          |
| Nominal heating capacity                    | (3) kW     | 41,6     | 47,4     | 55,5        | 63,4     | 71,0     |
| Total power input for heating               | (2),(3) kW | 14,2     | 16,2     | 18,7        | 20,8     | 25,1     |
| COP   | (3)        | 2,93     | 2,93     | 2,97        | 3,05     | 2,83     |
| Efficiency class                            |            | C        | C        | C           | B        | C        |
| <b>Heating (EN 14511 values)</b>            |            |          |          |             |          |          |
| Nominal heating capacity                    | (3),(8) kW | 42,0     | 47,8     | 55,9        | 63,8     | 71,3     |
| COP   | (3),(8)    | 2,88     | 2,88     | 2,93        | 3,01     | 2,81     |
| Efficiency class                            |            | C        | C        | C           | B        | C        |
| <b>Compressors</b>                          |            |          |          |             |          |          |
| Type  |            |          |          | Scroll      |          |          |
| Quantity/Cooling circuits                   | n°/n°      | 2 / 1    | 2 / 1    | 2 / 1       | 2 / 1    | 2 / 1    |
| Capacity steps                              | n°         | 0-50-100 | 0-50-100 | 0-50-100    | 0-50-100 | 0-50-100 |
| Total oil load                              | kg         | 5,2      | 6,5      | 6,5         | 6,5      | 6,6      |
| Total refrigerant load (CH version)         | kg         | 6,7      | 6,8      | 9           | 15,8     | 16       |
| Total refrigerant load (/HP version)        | kg         | 14,8     | 14,9     | 17          | 18,4     | 18,6     |
| <b>Fans</b>                                 |            |          |          | Axial       |          |          |
| Type  |            |          |          |             |          |          |
| Quantity                                    | n°         | 2        | 2        | 2           | 2        | 2        |
| Air flow                                    | m³/h       | 17.000   | 17.000   | 15.000      | 19.000   | 19.000   |
| <b>Evaporator</b>                           |            |          |          | With plates |          |          |
| Type  |            |          |          |             |          |          |
| Quantity                                    | n°         | 1        | 1        | 1           | 1        | 1        |
| Water flow                                  | l/h        | 7034     | 7893     | 8908        | 10387    | 11481    |
| Pressure drop                               | kPa        | 65,0     | 55,7     | 54,8        | 51,1     | 35,5     |
| Hydraulic module                            |            |          |          |             |          |          |
| Head ratings                                | (6) kPa    | 127      | 108      | 105         | 153      | 149      |
| Storage tank capacity                       | (6) l      | 165      | 165      | 165         | 200      | 200      |
| Expansion vessel                            | l          | 5        | 5        | 5           | 18       | 18       |
| <b>Noise levels</b>                         |            |          |          |             |          |          |
| Noise power level (basic version)           | (4) dB(A)  | 83       | 83       | 83          | 83       | 84       |
| Noise pressure level (basic unit)           | (5) dB(A)  | 51       | 51       | 51          | 51       | 52       |
| Noise power level (LN version)              | (4) dB(A)  | 81       | 81       | 81          | 81       | 82       |
| Noise pressure level (LN version)           | (5) dB(A)  | 49       | 49       | 49          | 49       | 50       |
| <b>Basic version dimensions and weights</b> |            |          |          |             |          |          |
| Length                                      | mm         | 1.750    | 1.750    | 1.750       | 2.233    | 2.233    |
| Depth                                       | mm         | 1.003    | 1.003    | 1.003       | 1.020    | 1.020    |
| Height                                      | mm         | 1.400    | 1.400    | 1.400       | 1.738    | 1.738    |
| Operating weight                            | kg         | 428      | 439      | 453         | 631      | 631      |

(1)External air temperature 35°C; evaporator ingoing-outgoing water temperature 12-7°C

(2)The total capacity is represented by the sum of the power absorbed by compressors and that absorbed by fans

(3)External air temperature 7°C BS, 6°C BU; condenser ingoing-outgoing water temperature 40-45 °C

(4)Noise power levels measured according to ISO 3744, under nominal operating conditions.

(5)Sound pressure levels measured at 10 metres from the unit in free field under nominal operating conditions, according to ISO 3744.

(6)For ST 2PS version

(8)Values in compliance with EN 14511-3:2011

**OXFORD - TECHNICAL DATA**

| UNIT SIZE                                   |            | 8.2      | 9.2      | 10.2        | 12.2     | 13.2     |
|---|------------|----------|----------|-------------|----------|----------|
| <b>Cooling (Gross values)</b>               |            |          |          |             |          |          |
| Nominal cooling capacity                    | (1) kW     | 83,5     | 93,7     | 104,0       | 117,0    | 125,0    |
| Total power input for cooling               | (1),(2) kW | 25,9     | 31,3     | 36,9        | 40,8     | 45,5     |
| EER   | (1)        | 3,22     | 2,99     | 2,82        | 2,87     | 2,75     |
| ESEER                                       |            | 4,99     | 4,63     | 4,37        | 4,45     | 4,26     |
| Efficiency class                            |            | A        | B        | C           | C        | C        |
| <b>Cooling (EN 14511 values)</b>            |            |          |          |             |          |          |
| Nominal cooling capacity                    | (1),(8) kW | 83,0     | 93,1     | 103,4       | 116,4    | 124,4    |
| EER   | (1),(8)    | 3,14     | 2,92     | 2,76        | 2,81     | 2,70     |
| ESEER                                       | (8)        | 4,58     | 4,25     | 4,03        | 4,09     | 3,93     |
| Efficiency class                            |            | A        | B        | C           | C        | D        |
| <b>Heating (Gross values)</b>               |            |          |          |             |          |          |
| Nominal heating capacity                    | (3) kW     | 83,9     | 97,0     | 112,0       | 127,0    | 139,0    |
| Total power input for heating               | (2),(3) kW | 27,9     | 32,6     | 36,7        | 42,8     | 46,0     |
| COP   | (3)        | 3,01     | 2,98     | 3,05        | 2,97     | 3,02     |
| Efficiency class                            |            | B        | C        | B           | C        | B        |
| <b>Heating (EN 14511 values)</b>            |            |          |          |             |          |          |
| Nominal heating capacity                    | (3),(8) kW | 84,4     | 97,6     | 112,6       | 127,7    | 139,7    |
| COP   | (3),(8)    | 2,97     | 2,94     | 3,02        | 2,94     | 2,99     |
| Efficiency class                            |            | C        | C        | B           | C        | C        |
| <b>Compressors</b>                          |            |          |          |             |          |          |
| Type  |            |          |          | Scroll      |          |          |
| Quantity/Cooling circuits                   | n°/n°      | 2 / 1    | 2 / 1    | 2 / 1       | 2 / 1    | 2 / 1    |
| Capacity steps                              | n°         | 0-50-100 | 0-50-100 | 0-50-100    | 0-50-100 | 0-50-100 |
| Total oil load                              | kg         | 6,2      | 12,4     | 12,4        | 12,4     | 14,2     |
| Total refrigerant load (CH version)         | kg         | 23,2     | 23,4     | 23,6        | 23,7     | 23,9     |
| Total refrigerant load (/HP version)        | kg         | 25,7     | 25,8     | 26          | 26       | 26       |
| <b>Fans</b>                                 |            |          |          |             |          |          |
| Type  |            |          |          | Axial       |          |          |
| Quantity                                    | n°         | 3        | 3        | 3           | 2        | 2        |
| Air flow                                    | m³/h       | 28.500   | 28.500   | 28.500      | 36.000   | 36.000   |
| <b>Evaporator</b>                           |            |          |          |             |          |          |
| Type  |            |          |          | With plates |          |          |
| Quantity                                    | n°         | 1        | 1        | 1           | 1        | 1        |
| Water flow                                  | l/h        | 14359    | 16113    | 17885       | 20120    | 21496    |
| Pressure drop                               | kPa        | 49,4     | 50,6     | 46,0        | 48,8     | 45,1     |
| Hydraulic module                            |            |          |          |             |          |          |
| Head ratings                                | (6) kPa    | 123      | 143      | 130         | 124      | 108      |
| Storage tank capacity                       | (6) l      | 450      | 450      | 450         | 450      | 450      |
| Expansion vessel                            | l          | 18       | 18       | 18          | 18       | 18       |
| <b>Noise levels</b>                         |            |          |          |             |          |          |
| Noise power level (basic version)           | (4) dB(A)  | 85       | 86       | 86          | 87       | 87       |
| Noise pressure level (basic unit)           | (5) dB(A)  | 53       | 54       | 54          | 55       | 55       |
| Noise power level (LN version)              | (4) dB(A)  | 83       | 84       | 84          | 85       | 85       |
| Noise pressure level (LN version)           | (5) dB(A)  | 51       | 52       | 52          | 53       | 53       |
| <b>Basic version dimensions and weights</b> |            |          |          |             |          |          |
| Length                                      | mm         | 3.234    | 3.234    | 3.234       | 3.233    | 3.233    |
| Depth                                       | mm         | 1.144    | 1.144    | 1.144       | 1.120    | 1.120    |
| Height                                      | mm         | 1.740    | 1.740    | 1.740       | 1.882    | 1.882    |
| Operating weight                            | kg         | 911      | 920      | 935         | 1.077    | 1.120    |

(1)External air temperature 35°C; evaporator ingoing-outgoing water temperature 12-7°C

(2)The total capacity is represented by the sum of the power absorbed by compressors and that absorbed by fans

(3)External air temperature 7°C BS, 6°C BU; condenser ingoing-outgoing water temperature 40-45 °C

(4)Noise power levels measured according to ISO 3744, under nominal operating conditions.

(5)Sound pressure levels measured at 10 metres from the unit in free field under nominal operating conditions, according to ISO 3744.

(6)For ST 2PS version

(8)Values in compliance with EN 14511-3:2011

**OXFORD SLN - TECHNICAL DATA**

| UNIT SIZE                                   |            | 3.2      | 4.2      | 5.2         | 6.2      | 7.2      |
|---|------------|----------|----------|-------------|----------|----------|
| <b>Cooling (Gross values)</b>               |            |          |          |             |          |          |
| Nominal cooling capacity                    | (1) kW     | 40,9     | 45,9     | 51,8        | 60,4     | 66,8     |
| Total power input for cooling               | (1),(2) kW | 13,6     | 15,7     | 18,4        | 20,1     | 24,9     |
| EER   | (1)        | 3,01     | 2,92     | 2,82        | 3,00     | 2,69     |
| ESEER                                       |            | 4,67     | 4,53     | 4,37        | 4,65     | 4,21     |
| Efficiency class                            |            | B        | B        | C           | B        | D        |
| <b>Cooling (EN 14511 values)</b>            |            |          |          |             |          |          |
| Nominal cooling capacity                    | (1),(8) kW | 40,5     | 45,5     | 51,4        | 60,0     | 66,4     |
| EER   | (1),(8)    | 2,90     | 2,83     | 2,74        | 2,92     | 2,64     |
| ESEER                                       | (8)        | 4,24     | 4,14     | 4,00        | 4,26     | 4,01     |
| Efficiency class                            |            | C        | C        | C           | B        | D        |
| <b>Heating (Gross values)</b>               |            |          |          |             |          |          |
| Nominal heating capacity                    | (3) kW     | 41,6     | 47,4     | 55,5        | 63,4     | 71,0     |
| Total power input for heating               | (2),(3) kW | 14,2     | 16,2     | 18,7        | 20,8     | 25,1     |
| COP   | (3)        | 2,93     | 2,93     | 2,97        | 3,05     | 2,83     |
| Efficiency class                            |            | C        | C        | C           | B        | C        |
| <b>Heating (EN 14511 values)</b>            |            |          |          |             |          |          |
| Nominal heating capacity                    | (3),(8) kW | 42,0     | 47,8     | 55,9        | 63,8     | 71,3     |
| COP   | (3),(8)    | 2,88     | 2,88     | 2,93        | 3,01     | 2,81     |
| Efficiency class                            |            | C        | C        | C           | B        | C        |
| <b>Compressors</b>                          |            |          |          |             |          |          |
| Type  |            |          |          | Scroll      |          |          |
| Quantity/Cooling circuits                   | n°/n°      | 2 / 1    | 2 / 1    | 2 / 1       | 2 / 1    | 2 / 1    |
| Capacity steps                              | n°         | 0-50-100 | 0-50-100 | 0-50-100    | 0-50-100 | 0-50-100 |
| Total oil load                              | kg         | 6        | 6,6      | 6,6         | 6,6      | 6,6      |
| Total refrigerant load (CH version)         | kg         | 6,7      | 6,8      | 9           | 15,8     | 16       |
| Total refrigerant load (/HP version)        | kg         | 14,8     | 14,9     | 17          | 18,4     | 18,6     |
| <b>Fans</b>                                 |            |          |          | Axial       |          |          |
| Type  |            |          |          |             |          |          |
| Quantity                                    | n°         | 2        | 2        | 2           | 3        | 3        |
| Air flow                                    | m³/h       | 17.000   | 17.000   | 15.000      | 19.000   | 19.000   |
| <b>Evaporator</b>                           |            |          |          | With plates |          |          |
| Type  |            |          |          |             |          |          |
| Quantity                                    | n°         | 1        | 1        | 1           | 1        | 1        |
| Water flow                                  | l/h        | 7034     | 7893     | 8908        | 10387    | 11481    |
| Pressure drop                               | kPa        | 65,0     | 55,7     | 54,8        | 51,1     | 35,5     |
| Hydraulic module                            |            |          |          |             |          |          |
| Head ratings                                | (6) kPa    | 127      | 108      | 105         | 108      | 104      |
| Storage tank capacity                       | (6) l      | 165      | 165      | 165         | 200      | 200      |
| Expansion vessel                            | l          | 5        | 5        | 5           | 18       | 18       |
| <b>Noise levels</b>                         |            |          |          |             |          |          |
| Noise power level                           | (4) dB(A)  | 76       | 77       | 78          | 78       | 79       |
| Noise pressure level                        | (5) dB(A)  | 44       | 45       | 46          | 46       | 47       |
| <b>Basic version dimensions and weights</b> |            |          |          |             |          |          |
| Length                                      | mm         | 1750     | 1750     | 2233        | 3234     | 3234     |
| Depth                                       | mm         | 1003     | 1003     | 1020        | 1144     | 1144     |
| Height                                      | mm         | 1400     | 1400     | 1738        | 1740     | 1740     |
| Operating weight                            | kg         | 428      | 439      | 628         | 819      | 846      |

(1)External air temperature 35°C; evaporator ingoing-outgoing water temperature 12-7°C

(2)The total capacity is represented by the sum of the power absorbed by compressors and that absorbed by fans

(3)External air temperature 7°C BS, 6°C BU; condenser ingoing-outgoing water temperature 40-45 °C

(4)Noise power levels measured according to ISO 3744, under nominal operating conditions.

(5)Sound pressure levels measured at 10 metres from the unit in free field under nominal operating conditions, according to ISO 3744.

(6)For ST 2PS version

(8)Values in compliance with EN 14511-3:2011

**OXFORD SLN - TECHNICAL DATA**

| UNIT SIZE                                   |            | 8.2      | 9.2      | 10.2        | 12.2     | 13.2     |
|---|------------|----------|----------|-------------|----------|----------|
| <b>Cooling (Gross values)</b>               |            |          |          |             |          |          |
| Nominal cooling capacity                    | (1) kW     | 83,5     | 93,7     | 104,0       | 117,0    | 125,0    |
| Total power input for cooling               | (1),(2) kW | 25,9     | 31,3     | 36,9        | 40,8     | 45,5     |
| EER   | (1)        | 3,22     | 2,99     | 2,82        | 2,87     | 2,75     |
| ESEER                                       |            | 4,99     | 4,63     | 4,37        | 4,45     | 4,26     |
| Efficiency class                            |            | A        | B        | C           | C        | C        |
| <b>Cooling (EN 14511 values)</b>            |            |          |          |             |          |          |
| Nominal cooling capacity                    | (1),(8) kW | 83,0     | 93,1     | 103,4       | 116,4    | 124,4    |
| EER   | (1),(8)    | 3,14     | 2,92     | 2,76        | 2,81     | 2,70     |
| ESEER                                       | (8)        | 4,58     | 4,25     | 4,03        | 4,09     | 3,93     |
| Efficiency class                            |            | A        | B        | C           | C        | D        |
| <b>Heating (Gross values)</b>               |            |          |          |             |          |          |
| Nominal heating capacity                    | (3) kW     | 83,9     | 97,0     | 112,0       | 127,0    | 139,0    |
| Total power input for heating               | (2),(3) kW | 27,9     | 32,6     | 36,7        | 42,8     | 46,0     |
| COP   | (3)        | 3,01     | 2,98     | 3,05        | 2,97     | 3,02     |
| Efficiency class                            |            | B        | C        | B           | C        | B        |
| <b>Heating (EN 14511 values)</b>            |            |          |          |             |          |          |
| Nominal heating capacity                    | (3),(8) kW | 84,4     | 97,6     | 112,6       | 127,7    | 139,7    |
| COP   | (3),(8)    | 2,97     | 2,94     | 3,02        | 2,94     | 2,99     |
| Efficiency class                            |            | C        | C        | B           | C        | C        |
| <b>Compressors</b>                          |            |          |          |             |          |          |
| Type  |            |          |          | Scroll      |          |          |
| Quantity/Cooling circuits                   | n°/n°      | 2 / 1    | 2 / 1    | 2 / 1       | 2 / 1    | 2 / 1    |
| Capacity steps                              | n°         | 0-50-100 | 0-50-100 | 0-50-100    | 0-50-100 | 0-50-100 |
| Total oil load                              | kg         | 13,4     | 13,4     | 13,4        | 13,4     | 13,4     |
| Total refrigerant load (CH version)         | kg         | 23,2     | 23,4     | 23,6        | 23,7     | 23,9     |
| Total refrigerant load (/HP version)        | kg         | 25,7     | 25,8     | 26          | 26       | 26       |
| <b>Fans</b>                                 |            |          |          |             |          |          |
| Type  |            |          |          | Axial       |          |          |
| Quantity                                    | n°         | 2        | 2        | 2           | 2        | 2        |
| Air flow                                    | m³/h       | 28.500   | 28.500   | 28.500      | 36.000   | 36.000   |
| <b>Evaporator</b>                           |            |          |          |             |          |          |
| Type  |            |          |          | With plates |          |          |
| Quantity                                    | n°         | 1        | 1        | 1           | 1        | 1        |
| Water flow                                  | l/h        | 14359    | 16113    | 17885       | 20120    | 21496    |
| Pressure drop                               | kPa        | 49,4     | 50,6     | 46,0        | 48,8     | 45,1     |
| Hydraulic module                            |            |          |          |             |          |          |
| Head ratings                                | (6) kPa    | 123      | 143      | 130         | 124      | 108      |
| Storage tank capacity                       | (6) l      | 450      | 450      | 450         | 450      | 450      |
| Expansion vessel                            | l          | 18       | 18       | 18          | 18       | 18       |
| <b>Noise levels</b>                         |            |          |          |             |          |          |
| Noise power level                           | (4) dB(A)  | 80       | 81       | 82          | 82       | 83       |
| Noise pressure level                        | (5) dB(A)  | 48       | 49       | 50          | 50       | 51       |
| <b>Basic version dimensions and weights</b> |            |          |          |             |          |          |
| Length                                      | mm         | 3233     | 3233     | 3233        | 3233     | 3233     |
| Depth                                       | mm         | 1120     | 1120     | 1120        | 1120     | 1120     |
| Height                                      | mm         | 1882     | 1882     | 1882        | 1882     | 1882     |
| Operating weight                            | kg         | 1136     | 1144     | 1156        | 1196     | 1238     |

(1)External air temperature 35°C; evaporator ingoing-outgoing water temperature 12-7°C

(2)The total capacity is represented by the sum of the power absorbed by compressors and that absorbed by fans

(3)External air temperature 7°C BS, 6°C BU; condenser ingoing-outgoing water temperature 40-45 °C

(4)Noise power levels measured according to ISO 3744, under nominal operating conditions.

(5)Sound pressure levels measured at 10 metres from the unit in free field under nominal operating conditions, according to ISO 3744.

(6)For ST 2PS version

(8)Values in compliance with EN 14511-3:2011

**OXFORD /LE - TECHNICAL DATA**

| UNIT SIZE                                   |            | 3.2      | 4.2      | 5.2      | 6.2      | 7.2      |
|---|------------|----------|----------|----------|----------|----------|
| <b>Cooling</b>                              |            |          |          |          |          |          |
| Nominal cooling capacity                    | (1) kW     | 45,9     | 51,5     | 59,1     | 70,1     | 76,39    |
| Total absorbed power in cooling mode        | (1),(2) kW | 13,78    | 15,98    | 18,88    | 20,58    | 25,1     |
| EER   | (1)        | 3,33     | 3,22     | 3,13     | 3,41     | 3,04     |
| <b>Heating</b>                              |            |          |          |          |          |          |
| Nominal heating capacity                    | (3) kW     | 43,1     | 49,3     | 57,7     | 66,4     | 71,99    |
| Total absorbed power in heating mode        | (2),(3) kW | 10,98    | 12,28    | 14,08    | 16,18    | 20,02    |
| COP   | (3)        | 3,93     | 4,01     | 4,10     | 4,10     | 3,60     |
| <b>Compressors</b>                          |            |          |          |          |          |          |
| Type  |            |          |          | Scroll   |          |          |
| Quantity/Cooling circuits                   | n°/n°      | 2 / 1    | 2 / 1    | 2 / 1    | 2 / 1    | 2 / 1    |
| Capacity steps                              | n°         | 0-50-100 | 0-50-100 | 0-50-100 | 0-50-100 | 0-50-100 |
| Total oil load                              | kg         | 5,2      | 6,5      | 6,5      | 6,5      | 6,6      |
| <b>Fans</b>                                 |            |          |          | Axial    |          |          |
| Type  | n°         | 2        | 2        | 2        | 2        | 2        |
| Quantity                                    |            |          |          |          |          |          |
| Air flow                                    | m³/h       | 17.000   | 17.000   | 15.000   | 19.000   | 19.000   |
| <b>Noise levels</b>                         |            |          |          |          |          |          |
| Noise power level (basic version)           | (4) dB(A)  | 83       | 83       | 83       | 83       | 84       |
| Noise pressure level (basic unit)           | (5) dB(A)  | 51       | 51       | 51       | 51       | 52       |
| Noise power level (LN version)              | (4) dB(A)  | 81       | 81       | 81       | 81       | 82       |
| Noise pressure level (LN version)           | (5) dB(A)  | 49       | 49       | 49       | 49       | 50       |
| Noise power level (SLN version)             | (4) dB(A)  | 76       | 77       | 78       | 78       | 79       |
| Noise pressure level (SLN version)          | (5) dB(A)  | 44       | 45       | 46       | 46       | 47       |
| <b>Basic version dimensions and weights</b> |            |          |          |          |          |          |
| Length                                      | mm         | 1.750    | 1.750    | 1.750    | 2.233    | 2.233    |
| Depth                                       | mm         | 1.003    | 1.003    | 1.003    | 1.020    | 1.020    |
| Height                                      | mm         | 1.400    | 1.400    | 1.400    | 1.738    | 1.738    |
| Operating weight                            | kg         | 411      | 419      | 432      | 598      | 598      |

(1)External air temperature 35°C; evaporation temperature 7,5°C

(2)The total capacity is represented by the sum of the power absorbed by compressors and that absorbed by fans

(3)External air temperature 8°C, 70% UR; condensation temperature 40°C

(4)Noise power levels measured according to ISO 3744, under nominal operating conditions.

(5)Sound pressure levels measured at 10 metres from the unit in free field under nominal operating conditions, according to ISO 3744.

**OXFORD /LE - TECHNICAL DATA**

| UNIT SIZE                                   |            | 8.2      | 9.2      | 10.2     | 12.2     | 13.2     |
|---|------------|----------|----------|----------|----------|----------|
| <b>Cooling</b>                              |            |          |          |          |          |          |
| Nominal cooling capacity                    | (1) kW     | 92,3     | 104,7    | 117,2    | 134,3    | 144,4    |
| Total absorbed power in cooling mode        | (1),(2) kW | 26,07    | 31,77    | 37,97    | 42,2     | 47,4     |
| EER   | (1)        | 3,54     | 3,30     | 3,09     | 3,18     | 3,05     |
| <b>Heating</b>                              |            |          |          |          |          |          |
| Nominal heating capacity                    | (3) kW     | 87,4     | 100,7    | 116,6    | 131,4    | 143,7    |
| Total absorbed power in heating mode        | (2),(3) kW | 21,97    | 25,27    | 28,67    | 34,1     | 37,2     |
| COP   | (3)        | 3,98     | 3,98     | 4,07     | 3,85     | 3,86     |
| <b>Compressors</b>                          |            |          |          |          |          |          |
| Type  |            |          |          | Scroll   |          |          |
| Quantity/Cooling circuits                   | n°/n°      | 2 / 1    | 2 / 1    | 2 / 1    | 2 / 1    | 2 / 1    |
| Capacity steps                              | n°         | 0-50-100 | 0-50-100 | 0-50-100 | 0-50-100 | 0-50-100 |
| Total oil load                              | kg         | 13,4     | 13,4     | 13,4     | 13,4     | 13,4     |
| <b>Fans</b>                                 |            |          |          |          |          |          |
| Type  |            |          |          | Axial    |          |          |
| Quantity                                    | n°         | 3        | 3        | 3        | 2        | 2        |
| Air flow                                    | m³/h       | 28.500   | 28.500   | 28.500   | 36.000   | 36.000   |
| <b>Noise levels</b>                         |            |          |          |          |          |          |
| Noise power level (basic version)           | (4) dB(A)  | 85       | 86       | 86       | 87       | 87       |
| Noise pressure level (basic unit)           | (5) dB(A)  | 53       | 54       | 54       | 55       | 55       |
| Noise power level (LN version)              | (4) dB(A)  | 83       | 84       | 84       | 85       | 85       |
| Noise pressure level (LN version)           | (5) dB(A)  | 51       | 52       | 52       | 53       | 53       |
| Noise power level (SLN version)             | (4) dB(A)  | 80       | 81       | 82       | 82       | 83       |
| Noise pressure level (SLN version)          | (5) dB(A)  | 48       | 49       | 50       | 50       | 51       |
| <b>Basic version dimensions and weights</b> |            |          |          |          |          |          |
| Length                                      | mm         | 3233     | 3233     | 3233     | 3233     | 3233     |
| Depth                                       | mm         | 1120     | 1120     | 1120     | 1120     | 1120     |
| Height                                      | mm         | 1738     | 1738     | 1738     | 1882     | 1882     |
| Operating weight                            | kg         | 875      | 883      | 889      | 1033     | 1071     |

(1)External air temperature 35°C; evaporation temperature 7,5°C

(2)The total capacity is represented by the sum of the power absorbed by compressors and that absorbed by fans

(3)External air temperature 8°C, 70% UR; condensation temperature 40°C

(4)Noise power levels measured according to ISO 3744, under nominal operating conditions.

(5)Sound pressure levels measured at 10 metres from the unit in free field under nominal operating conditions, according to ISO 3744.

**OXFORD /LE - TECHNICAL DATA**

| UNIT SIZE                                   |            | 15.2     | 16.2     | 14.4          | 16.4          | 18.4          |
|---|------------|----------|----------|---------------|---------------|---------------|
| <b>Cooling</b>                              |            |          |          |               |               |               |
| Nominal cooling capacity                    | (1) kW     | 160,8    | 169,4    | 150,2         | 172,1         | 210,1         |
| Total absorbed power in cooling mode        | (1),(2) kW | 56,9     | 62,8     | 52,2          | 57,1          | 65,1          |
| EER   | (1)        | 2,83     | 2,70     | 2,88          | 3,01          | 3,23          |
| <b>Heating</b>                              |            |          |          |               |               |               |
| Nominal heating capacity                    | (3) kW     | 154,7    | 163,4    | 146,9         | 169,1         | 209           |
| Total absorbed power in heating mode        | (2),(3) kW | 45,4     | 48,4     | 41,7          | 44,4          | 53,1          |
| COP   | (3)        | 3,41     | 3,38     | 3,52          | 3,81          | 3,94          |
| <b>Compressors</b>                          |            |          |          |               |               |               |
| Type  |            |          |          | Scroll        |               |               |
| Quantity/Cooling circuits                   | n°/n°      | 2 / 1    | 2 / 1    | 4 / 2         | 4 / 2         | 4 / 2         |
| Capacity steps                              | n°         | 0-50-100 | 0-50-100 | 025-50-75-100 | 025-50-75-100 | 025-50-75-100 |
| Total oil load                              | kg         | 14       | 14,5     | 14            | 16            | 24,8          |
| <b>Fans</b>                                 |            |          |          | Axial         |               |               |
| Type  | n°         | 2        | 2        | 2             | 2             | 3             |
| Quantity                                    |            |          |          |               |               |               |
| Air flow                                    | m³/h       | 40.000   | 40.000   | 40.000        | 40.000        | 60.000        |
| <b>Noise levels</b>                         |            |          |          |               |               |               |
| Noise power level (basic version)           | (4) dB(A)  | 89       | 89       | 90            | 90            | 91            |
| Noise pressure level (basic unit)           | (5) dB(A)  | 57       | 57       | 58            | 58            | 59            |
| Noise power level (LN version)              | (4) dB(A)  | 86       | 86       | 88            | 88            | 89            |
| Noise pressure level (LN version)           | (5) dB(A)  | 54       | 54       | 56            | 56            | 57            |
| Noise power level (SLN version)             | (4) dB(A)  | 84       | 84       | 86            | 86            | 87            |
| Noise pressure level (SLN version)          | (5) dB(A)  | 52       | 52       | 54            | 54            | 55            |
| <b>Basic version dimensions and weights</b> |            |          |          |               |               |               |
| Length                                      | mm         | 3.233    | 3.233    | 3.233         | 3.240         | 4.240         |
| Depth                                       | mm         | 1.120    | 1.120    | 1.120         | 1.120         | 1.120         |
| Height                                      | mm         | 2.382    | 2.382    | 2.382         | 2.382         | 2.382         |
| Operating weight                            | kg         | 1.300    | 1.390    | 1.298         | 1.358         | 1.678         |

(1)External air temperature 35°C; evaporation temperature 7,5°C

(2)The total capacity is represented by the sum of the power absorbed by compressors and that absorbed by fans

(3)External air temperature 8°C, 70% UR; condensation temperature 40°C

(4)Noise power levels measured according to ISO 3744, under nominal operating conditions.

(5)Sound pressure levels measured at 10 metres from the unit in free field under nominal operating conditions, according to ISO 3744.

**OXFORD /LE - TECHNICAL DATA**

| UNIT SIZE                                   |            | 20.4          | 24.4          | 26.4          | 30.4          | 33.4          |
|---|------------|---------------|---------------|---------------|---------------|---------------|
| <b>Cooling</b>                              |            |               |               |               |               |               |
| Nominal cooling capacity                    | (1) kW     | 237,3         | 263,5         | 285,1         | 309,1         | 344,31        |
| Total absorbed power in cooling mode        | (1),(2) kW | 75,8          | 86,2          | 97,1          | 116           | 125,4         |
| EER   | (1)        | 3,13          | 3,06          | 2,94          | 2,66          | 2,75          |
| <b>Heating</b>                              |            |               |               |               |               |               |
| Nominal heating capacity                    | (3) kW     | 237,3         | 255,9         | 282,5         | 304,7         | 328           |
| Total absorbed power in heating mode        | (2),(3) kW | 59,9          | 68,1          | 74,5          | 90,7          | 98,8          |
| COP   | (3)        | 3,96          | 3,76          | 3,79          | 3,36          | 3,32          |
| <b>Compressors</b>                          |            |               |               |               |               |               |
| Type  |            |               |               | Scroll        |               |               |
| Quantity/Cooling circuits                   | n°/n°      | 4 / 2         | 4 / 2         | 4 / 2         | 4 / 2         | 4 / 2         |
| Capacity steps                              | n°         | 025-50-75-100 | 025-50-75-100 | 025-50-75-100 | 025-50-75-100 | 025-50-75-100 |
| Total oil load                              | kg         | 24,8          | 28,4          | 32            | 28            | 29            |
| <b>Fans</b>                                 |            |               |               |               |               |               |
| Type  |            |               |               | Axial         |               |               |
| Quantity                                    | n°         | 3             | 4             | 4             | 4             | 5             |
| Air flow                                    | m³/h       | 60.000        | 70.000        | 70.000        | 78.000        | 90.000        |
| <b>Noise levels</b>                         |            |               |               |               |               |               |
| Noise power level (basic version)           | (4) dB(A)  | 92            | 93            | 93            | 95            | 96            |
| Noise pressure level (basic unit)           | (5) dB(A)  | 60            | 61            | 61            | 63            | 64            |
| Noise power level (LN version)              | (4) dB(A)  | 90            | 91            | 91            | 93            | 94            |
| Noise pressure level (LN version)           | (5) dB(A)  | 58            | 59            | 59            | 61            | 62            |
| Noise power level (SLN version)             | (4) dB(A)  | 88            | 88            | 89            | 91            | 92            |
| Noise pressure level (SLN version)          | (5) dB(A)  | 56            | 56            | 57            | 59            | 60            |
| <b>Basic version dimensions and weights</b> |            |               |               |               |               |               |
| Length                                      | mm         | 4.240         | 4.240         | 4.240         | 5.234         | 5.234         |
| Depth                                       | mm         | 1.120         | 1.120         | 1.120         | 1.120         | 1.120         |
| Height                                      | mm         | 2.382         | 2.382         | 2.382         | 2.382         | 2.382         |
| Operating weight                            | kg         | 1.698         | 1.822         | 1.960         | 2.278         | 2.354         |

(1)External air temperature 35°C; evaporation temperature 7,5°C

(2)The total capacity is represented by the sum of the power absorbed by compressors and that absorbed by fans

(3)External air temperature 8°C, 70% UR; condensation temperature 40°C

(4)Noise power levels measured according to ISO 3744, under nominal operating conditions.

(5)Sound pressure levels measured at 10 metres from the unit in free field under nominal operating conditions, according to ISO 3744.

**OXFORD A - TECHNICAL DATA**

| UNIT SIZE                                   |            | 3.2      | 4.2      | 5.2         | 6.2      | 7.2      |
|---|------------|----------|----------|-------------|----------|----------|
| <b>Cooling (Gross values)</b>               |            |          |          |             |          |          |
| Nominal cooling capacity                    | (1) kW     | 45,6     | 54,2     | 58,5        | 69,1     | 78,1     |
| Total power input for cooling               | (1),(2) kW | 14,3     | 17,1     | 18,2        | 21,8     | 22,8     |
| EER   | (1)        | 3,19     | 3,17     | 3,21        | 3,17     | 3,43     |
| ESEER                                       |            | 4,68     | 4,69     | 4,70        | 4,71     | 4,67     |
| Efficiency class                            |            | A        | A        | A           | A        | A        |
| <b>Cooling (EN 14511 values)</b>            |            |          |          |             |          |          |
| Nominal cooling capacity                    | (1),(8) kW | 45,3     | 54,0     | 58,2        | 68,8     | 77,7     |
| EER   | (1),(8)    | 3,11     | 3,11     | 3,13        | 3,12     | 3,35     |
| ESEER                                       | (8)        | 4,38     | 4,43     | 4,40        | 4,47     | 4,39     |
| Efficiency class                            |            | A        | A        | A           | A        | A        |
| <b>Heating (Gross values)</b>               |            |          |          |             |          |          |
| Nominal heating capacity                    | (3) kW     | 51,3     | 59,7     | 66,4        | 74,5     | 89,3     |
| Total power input for heating               | (2),(3) kW | 13,8     | 16,0     | 17,8        | 20,4     | 23,8     |
| COP   | (3)        | 3,72     | 3,74     | 3,74        | 3,66     | 3,76     |
| Efficiency class                            |            | A        | A        | A           | A        | A        |
| <b>Heating (EN 14511 values)</b>            |            |          |          |             |          |          |
| Nominal heating capacity                    | (3),(8) kW | 51,7     | 60,0     | 66,9        | 74,8     | 89,8     |
| COP   | (3),(8)    | 3,65     | 3,69     | 3,67        | 3,62     | 3,70     |
| Efficiency class                            |            | A        | A        | A           | A        | A        |
| <b>Compressors</b>                          |            |          |          |             |          |          |
| Type  |            |          |          | Scroll      |          |          |
| Quantity/Cooling circuits                   | n°/n°      | 2 / 1    | 2 / 1    | 2 / 1       | 2 / 1    | 2 / 1    |
| Capacity steps                              | n°         | 0-50-100 | 0-50-100 | 0-50-100    | 0-50-100 | 0-50-100 |
| Total oil load                              | kg         | 6        | 6,6      | 6,6         | 6,6      | 6,6      |
| Total refrigerant load (CH version)         | kg         | 6,7      | 6,8      | 9           | 15,8     | 16       |
| Total refrigerant load (/HP version)        | kg         | 14,8     | 14,9     | 17          | 18,4     | 18,6     |
| <b>Fans</b>                                 |            |          |          | Axial       |          |          |
| Type  |            |          |          |             |          |          |
| Quantity                                    | n°         | 2        | 2        | 2           | 2        | 3        |
| Air flow                                    | m³/h       | 15.000   | 15.000   | 19.000      | 19.000   | 28.500   |
| <b>Evaporator</b>                           |            |          |          | With plates |          |          |
| Type  |            |          |          |             |          |          |
| Quantity                                    | n°         | 1        | 1        | 1           | 1        | 1        |
| Water flow                                  | l/h        | 7574     | 9089     | 10064       | 11604    | 13431    |
| Pressure drop                               | kPa        | 44,0     | 34,0     | 43,0        | 28,0     | 38,0     |
| Hydraulic module                            |            |          |          |             |          |          |
| Head ratings                                | (6) kPa    | 135      | 121      | 169         | 171      | 142      |
| Storage tank capacity                       | (6) l      | 165      | 165      | 200         | 200      | 200      |
| Expansion vessel                            | l          | 5        | 5        | 18          | 18       | 18       |
| <b>Noise levels</b>                         |            |          |          |             |          |          |
| Noise power level (basic version)           | (4) dB(A)  | 80       | 80       | 81          | 81       | 82       |
| Noise pressure level (basic unit)           | (5) dB(A)  | 48       | 48       | 49          | 49       | 50       |
| Noise power level (LN version)              | (4) dB(A)  | 78       | 78       | 79          | 79       | 80       |
| Noise pressure level (LN version)           | (5) dB(A)  | 46       | 46       | 47          | 47       | 48       |
| <b>Basic version dimensions and weights</b> |            |          |          |             |          |          |
| Length                                      | mm         | 1.750    | 1.750    | 2.233       | 2.233    | 3.234    |
| Depth                                       | mm         | 1.003    | 1.003    | 1.020       | 1.020    | 1.144    |
| Height                                      | mm         | 1.400    | 1.400    | 1.738       | 1.738    | 1.740    |
| Operating weight                            | kg         | 467      | 486      | 673         | 695      | 883      |

(1)External air temperature 35°C; evaporator ingoing-outgoing water temperature 12-7°C

(2)The total capacity is represented by the sum of the power absorbed by compressors and that absorbed by fans

(3)External air temperature 7°C BS, 6°C BU; condenser ingoing-outgoing water temperature 40-45 °C

(4)Noise power levels measured according to ISO 3744, under nominal operating conditions.

(5)Sound pressure levels measured at 10 metres from the unit in free field under nominal operating conditions, according to ISO 3744.

(6)For ST 2PS version

(8)Values in compliance with EN 14511-3:2011

**OXFORD A - TECHNICAL DATA**

| UNIT SIZE                                   |         |       | 8.2         | 9.2      | 10.2     | 12.2     |
|---|---------|-------|-------------|----------|----------|----------|
| <b>Cooling (Gross values)</b>               |         |       |             |          |          |          |
| Nominal cooling capacity                    | (1)     | kW    | 83,6        | 104,5    | 118,1    | 138,0    |
| Total power input for cooling               | (1),(2) | kW    | 25,9        | 32,8     | 36,6     | 43,5     |
| EER   | (1)     |       | 3,23        | 3,19     | 3,23     | 3,17     |
| ESEER                                       |         |       | 5,00        | 4,64     | 4,48     | 4,42     |
| Efficiency class                            |         | A     | A           | A        | A        | A        |
| <b>Cooling (EN 14511 values)</b>            |         |       |             |          |          |          |
| Nominal cooling capacity                    | (1),(8) | kW    | 83,1        | 104,0    | 117,5    | 137,5    |
| EER   | (1),(8) |       | 3,16        | 3,12     | 3,15     | 3,13     |
| ESEER                                       | (8)     |       | 4,68        | 4,31     | 4,16     | 4,19     |
| Efficiency class                            |         | A     | A           | A        | A        | A        |
| <b>Heating (Gross values)</b>               |         |       |             |          |          |          |
| Nominal heating capacity                    | (3)     | kW    | 99,2        | 114,6    | 135,5    | 151,5    |
| Total power input for heating               | (2),(3) | kW    | 27,1        | 33,5     | 38,1     | 42,1     |
| COP   | (3)     |       | 3,67        | 3,42     | 3,56     | 3,60     |
| Efficiency class                            |         | A     | A           | A        | A        | A        |
| <b>Heating (EN 14511 values)</b>            |         |       |             |          |          |          |
| Nominal heating capacity                    | (3),(8) | kW    | 99,8        | 115,2    | 136,4    | 152,1    |
| COP   | (3),(8) |       | 3,61        | 3,38     | 3,50     | 3,56     |
| Efficiency class                            |         | A     | A           | A        | A        | A        |
| <b>Compressors</b>                          |         |       |             |          |          |          |
| Type  |         |       | Scroll      |          |          |          |
| Quantity/Cooling circuits                   | n°/n°   |       | 2 / 1       | 2 / 1    | 2 / 1    | 2 / 1    |
| Capacity steps                              | n°      |       | 0-50-100    | 0-50-100 | 0-50-100 | 0-50-100 |
| Total oil load                              | kg      |       | 6,2         | 12,4     | 12,4     | 12,4     |
| Total refrigerant load (CH version)         | kg      |       | 23,2        | 23,4     | 23,6     | 23,7     |
| Total refrigerant load (/HP version)        | kg      |       | 25,7        | 25,8     | 26       | 26       |
| <b>Fans</b>                                 |         |       | Axial       |          |          |          |
| Type  |         |       |             |          |          |          |
| Quantity                                    | n°      |       | 3           | 2        | 2        | 2        |
| Air flow                                    | m³/h    |       | 28.500      | 36.000   | 40.000   | 40.000   |
| <b>Evaporator</b>                           |         |       | With plates |          |          |          |
| Type  |         |       |             |          |          |          |
| Quantity                                    | n°      |       | 1           | 1        | 1        | 1        |
| Water flow                                  | l/h     |       | 14378       | 17422    | 20316    | 23164    |
| Pressure drop                               | kPa     |       | 43,0        | 51,0     | 52,0     | 30,0     |
| Hydraulic module                            |         |       |             |          |          |          |
| Head ratings                                | (6)     | kPa   | 126         | 135      | 126      | 128      |
| Storage tank capacity                       | (6)     | l     | 450         | 450      | 450      | 450      |
| Expansion vessel                            |         |       | 1           | 18       | 18       | 18       |
| <b>Noise levels</b>                         |         |       |             |          |          |          |
| Noise power level (basic version)           | (4)     | dB(A) | 85          | 85       | 86       | 86       |
| Noise pressure level (basic unit)           | (5)     | dB(A) | 53          | 53       | 54       | 54       |
| Noise power level (LN version)              | (4)     | dB(A) | 83          | 83       | 84       | 84       |
| Noise pressure level (LN version)           | (5)     | dB(A) | 51          | 51       | 52       | 52       |
| <b>Basic version dimensions and weights</b> |         |       |             |          |          |          |
| Length                                      |         | mm    | 3234        | 3233     | 3233     | 3233     |
| Depth                                       |         | mm    | 1144        | 1120     | 1120     | 1120     |
| Height                                      |         | mm    | 1740        | 1882     | 2382     | 2382     |
| Operating weight                            |         | kg    | 953         | 1018     | 1192     | 1250     |

(1)External air temperature 35°C; evaporator ingoing-outgoing water temperature 12-7°C

(2)The total capacity is represented by the sum of the power absorbed by compressors and that absorbed by fans

(3)External air temperature 7°C BS, 6°C BU; condenser ingoing-outgoing water temperature 40-45 °C

(4)Noise power levels measured according to ISO 3744, under nominal operating conditions.

(5)Sound pressure levels measured at 10 metres from the unit in free field under nominal operating conditions, according to ISO 3744.

(6)For ST 2PS version

(8)Values in compliance with EN 14511-3:2011

**OXFORD - ELECTRICAL DATA**

| UNIT SIZE                               |         |         | <b>3.2</b>       | <b>4.2</b>       | <b>5.2</b>       | <b>6.2</b>       | <b>7.2</b>       |
|---|---------|---------|------------------|------------------|------------------|------------------|------------------|
| Maximum absorbed power                  | (1),(3) | kW      | 19,18<br>(20,08) | 21,38<br>(22,28) | 25,18<br>(26,08) | 27,58<br>(29,08) | 31,94<br>(33,44) |
| Maximum absorbed current                | (2),(3) | A       | 38,1<br>(40,7)   | 45,1<br>(47,7)   | 48,3<br>(50,9)   | 54,7<br>(58,2)   | 59,3<br>(62,8)   |
| Maximum input current                   | (4)     | A       | 117,1<br>(118)   | 136,6<br>(137,5) | 145,2<br>(146,1) | 148,3<br>(149,8) | 190,7<br>(192,2) |
| Maximum input current with soft-starter | (4)     | A       | 81,2<br>(83,81)  | 90,0<br>(92,61)  | 97,5<br>(100,11) | 99,8<br>(102,5)  | 115,4<br>(118,1) |
| Fan nominal power                       | n° x kW | 2 x 0,6 | 2 x 0,6          | 2 x 0,6          | 2 x 0,6          | 2 x 0,6          | 2 x 0,6          |
| Fan nominal current                     | n° x A  | 2 x 3,0 | 2 x 3,0          | 2 x 3,0          | 2 x 3,0          | 2 x 3,0          | 2 x 3,0          |
| Pump motor nominal power                | kW      | 0,9     | 0,9              | 0,9              | 1,5              | 1,5              |                  |
| Pump motor nominal current              | A       | 2,61    | 2,61             | 2,61             | 3,49             | 3,49             |                  |
| Main power supply                       | V/ph/Hz |         |                  | 400/3N~/50 ±5%   |                  |                  |                  |
| Auxiliary power supply                  | V/ph/Hz |         |                  | 230/1~/50 ±5%    |                  |                  |                  |

| UNIT SIZE                               |         |         | <b>8.2</b>        | <b>9.2</b>        | <b>10.2</b>       | <b>12.2</b>       | <b>13.2</b>       |
|---|---------|---------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Maximum absorbed power                  | (1),(3) | kW      | 38,57<br>(40,07)  | 45,07<br>(46,92)  | 51,57<br>(53,42)  | 59,60<br>(61,80)  | 65,40<br>(67,60)  |
| Maximum absorbed current                | (2),(3) | A       | 73,1<br>(76,6)    | 83,2<br>(88,2)    | 93,2<br>(98,2)    | 104,2<br>(109,0)  | 116,3<br>(121,1)  |
| Maximum input current                   | (4)     | A       | 236,0<br>(237,5)  | 256,1<br>(257,95) | 266,1<br>(267,95) | 322,1<br>(324,3)  | 322,1<br>(324,3)  |
| Maximum input current with soft-starter | (4)     | A       | 143,7<br>(147,19) | 174,3<br>(179,28) | 180,5<br>(185,48) | 207,7<br>(212,48) | 215,8<br>(220,58) |
| Fan nominal power                       | n° x kW | 3 x 0,6 | 3 x 0,6           | 3 x 0,6           | 2 x 2,0           | 2 x 2,0           |                   |
| Fan nominal current                     | n° x A  | 3 x 3,0 | 3 x 3,0           | 3 x 3,0           | 2 x 4,0           | 2 x 4,0           |                   |
| Pump motor nominal power                | kW      | 1,5     | 1,85              | 1,85              | 2,2               | 2,2               |                   |
| Pump motor nominal current              | A       | 3,49    | 4,98              | 4,98              | 4,78              | 4,78              |                   |
| Main power supply                       | V/ph/Hz |         |                   | 400/3N~/50 ±5%    |                   | 400/3~/50 ±5%     |                   |
| Auxiliary power supply                  | V/ph/Hz |         |                   | 230/1~/50 ±5%     |                   | 230/1~/50 ±5%     |                   |

(1)Electrical power that must be supplied by the mains to power the unit.

(2)Maximum current before safety cut-outs stop the unit. This value is never exceeded and must be used to size the electrical supply cables and relevant safety devices (refer to electrical wiring diagram supplied with the unit)

(3)The values in brackets refer to the ST version unit (with storage tank and pumps or units with pumps only).

(4)Maximum input current calculated considering the power of the compressor with the higher power and the maximum current absorbed by all other devices

**OXFORD SLN - ELECTRICAL DATA**

| UNIT SIZE                               |         |         | <b>3.2</b>       | <b>4.2</b>       | <b>5.2</b>       | <b>6.2</b>       | <b>7.2</b>       |
|---|---------|---------|------------------|------------------|------------------|------------------|------------------|
| Maximum absorbed power                  | (1),(3) | kW      | 19,18<br>(20,08) | 21,38<br>(22,28) | 25,18<br>(26,08) | 27,58<br>(28,68) | 31,94<br>(33,04) |
| Maximum absorbed current                | (2),(3) | A       | 35,2<br>(37,8)   | 40,8<br>(43,4)   | 47,4<br>(50,0)   | 52,0<br>(54,7)   | 56,8<br>(59,5)   |
| Maximum input current                   | (4)     | A       | 121,6<br>(122,5) | 134,4<br>(135,3) | 144,7<br>(145,6) | 147,0<br>(148,1) | 171,4<br>(172,5) |
| Maximum input current with soft-starter | (4)     | A       | 81,2<br>(83,81)  | 90,0<br>(92,61)  | 97,5<br>(100,11) | 102,8<br>(105,5) | 118,4<br>(121,1) |
| Fan nominal power                       | n° x kW | 2 x 0,6 | 2 x 0,6          | 2 x 0,6          | 3 x 0,6          | 3 x 0,6          |                  |
| Fan nominal current                     | n° x A  | 2 x 3,0 | 2 x 3,0          | 2 x 3,0          | 3 x 3,0          | 3 x 3,0          |                  |
| Pump motor nominal power                | kW      | 0,9     | 0,9              | 0,9              | 1,1              | 1,1              |                  |
| Pump motor nominal current              | A       | 2,61    | 2,61             | 2,61             | 2,7              | 2,7              |                  |
| Main power supply                       | V/ph/Hz |         |                  |                  | 400/3N~/50 ±5%   |                  |                  |
| Auxiliary power supply                  | V/ph/Hz |         |                  |                  | 230/1~/50 ±5%    |                  |                  |

| UNIT SIZE                               |         |         | <b>8.2</b>        | <b>9.2</b>        | <b>10.2</b>       | <b>12.2</b>       | <b>13.2</b>       |
|---|---------|---------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Maximum absorbed power                  | (1),(3) | kW      | 38,57<br>(40,07)  | 45,07<br>(46,92)  | 51,57<br>(53,42)  | 59,60<br>(61,80)  | 65,40<br>(67,60)  |
| Maximum absorbed current                | (2),(3) | A       | 69,6<br>(73,1)    | 75,8<br>(80,8)    | 82,0<br>(87,0)    | 89,1<br>(93,9)    | 97,2<br>(102,0)   |
| Maximum input current                   | (4)     | A       | 213,3<br>(214,8)  | 264,3<br>(266,15) | 270,5<br>(272,35) | 316,5<br>(318,7)  | 324,6<br>(326,8)  |
| Maximum input current with soft-starter | (4)     | A       | 142,7<br>(146,19) | 142,7<br>(147,68) | 179,5<br>(184,48) | 179,5<br>(184,28) | 215,8<br>(220,58) |
| Fan nominal power                       | n° x kW | 2 x 2,0 | 2 x 2,0           | 2 x 2,0           | 2 x 2,0           | 2 x 2,0           |                   |
| Fan nominal current                     | n° x A  | 2 x 4,0 | 2 x 4,0           | 2 x 4,0           | 2 x 4,0           | 2 x 4,0           |                   |
| Pump motor nominal power                | kW      | 1,5     | 1,85              | 1,85              | 2,2               | 2,2               |                   |
| Pump motor nominal current              | A       | 3,49    | 4,98              | 4,98              | 4,78              | 4,78              |                   |
| Main power supply                       | V/ph/Hz |         |                   |                   | 400/3~/50 ±5%     |                   |                   |
| Auxiliary power supply                  | V/ph/Hz |         |                   |                   | 230/1~/50 ±5%     |                   |                   |

(1)Electrical power that must be supplied by the mains to power the unit.

(2)Maximum current before safety cut-outs stop the unit. This value is never exceeded and must be used to size the electrical supply cables and relevant safety devices (refer to electrical wiring diagram supplied with the unit)

(3)The values in brackets refer to the ST version unit (with storage tank and pumps or units with pumps only).

(4)Maximum input current calculated considering the power of the compressor with the higher power and the maximum current absorbed by all other devices

**OXFORD/LE - ELECTRICAL DATA**

| UNIT SIZE                                 |             | <b>3.2</b> | <b>4.2</b>     | <b>5.2</b> | <b>6.2</b> | <b>7.2</b> |
|---|-------------|------------|----------------|------------|------------|------------|
| Maximum absorbed power                    | (1) n° x kW | 19,18      | 21,38          | 25,18      | 27,58      | 31,94      |
| Maximum absorbed current                  | (2) n° x A  | 38,1       | 45,1           | 48,3       | 54,7       | 59,3       |
| Maximum startup current                   | (3) n° x A  | 117,1      | 136,6          | 145,2      | 148,3      | 190,7      |
| Maximum startup current with soft.starter | (3) n° x A  | 81,20      | 90,00          | 97,50      | 99,80      | 115,40     |
| Fan nominal power                         | kW          | 2 x 0,6    | 2 x 0,6        | 2 x 0,6    | 2 x 0,6    | 2 x 0,6    |
| Fan nominal current                       | A           | 2 x 3,0    | 2 x 3,0        | 2 x 3,0    | 2 x 3,0    | 2 x 3,0    |
| Main power supply                         | V/ph/Hz     |            | 400/3N~/50 ±5% |            |            |            |
| Auxilliary power supply                   | V/ph/Hz     |            | 230/1~/50 ±5%  |            |            |            |

| UNIT SIZE                                 |             | <b>8.2</b> | <b>9.2</b>     | <b>10.2</b> | <b>12.2</b>   | <b>13.2</b> |
|---|-------------|------------|----------------|-------------|---------------|-------------|
| Maximum absorbed power                    | (1) n° x kW | 38,57      | 45,07          | 51,57       | 59,60         | 65,40       |
| Maximum absorbed current                  | (2) n° x A  | 73,1       | 83,2           | 93,2        | 104,2         | 116,3       |
| Maximum startup current                   | (3) n° x A  | 236,0      | 256,1          | 266,1       | 322,1         | 322,1       |
| Maximum startup current with soft.starter | (3) n° x A  | 143,70     | 174,30         | 180,50      | 207,70        | 215,80      |
| Fan nominal power                         | kW          | 3 x 0,6    | 3 x 0,6        | 3 x 0,6     | 2 x 2,0       | 2 x 2,0     |
| Fan nominal current                       | A           | 3 x 3,0    | 3 x 3,0        | 3 x 3,0     | 2 x 4,0       | 2 x 4,0     |
| Main power supply                         | V/ph/Hz     |            | 400/3N~/50 ±5% |             | 400/3~/50 ±5% |             |
| Auxilliary power supply                   | V/ph/Hz     |            | 230/1~/50 ±5%  |             | 230/1~/50 ±5% |             |

**OXFORD/LE - ELECTRICAL DATA**

| UNIT SIZE                                 |             | <b>15.2</b> | <b>16.2</b>   | <b>14.4</b> | <b>16.4</b> | <b>18.4</b> |
|---|-------------|-------------|---------------|-------------|-------------|-------------|
| Maximum absorbed power                    | (1) n° x kW | 74,00       | 80,00         | 70,80       | 77,60       | 92,60       |
| Maximum absorbed current                  | (2) n° x A  | 123,7       | 131,0         | 114,6       | 136,3       | 160,3       |
| Maximum startup current                   | (3) n° x A  | 382,2       | 389,5         | 246,0       | 299,2       | 333,2       |
| Maximum startup current with soft.starter | (3) n° x A  | 238,60      | 253,30        | 168,20      | 203,30      | 244,10      |
| Fan nominal power                         | kW          | 2 x 2,0     | 2 x 2,0       | 2 x 2,0     | 2 x 2,0     | 3 x 2,0     |
| Fan nominal current                       | A           | 2 x 4,0     | 2 x 4,0       | 2 x 4,0     | 2 x 4,0     | 3 x 4,0     |
| Main power supply                         | V/ph/Hz     |             | 400/3~/50 ±5% |             |             |             |
| Auxilliary power supply                   | V/ph/Hz     |             | 230/1~/50 ±5% |             |             |             |

| UNIT SIZE                                 |             | <b>20.4</b> | <b>24.4</b>   | <b>26.4</b> | <b>30.4</b> | <b>33.4</b> |
|---|-------------|-------------|---------------|-------------|-------------|-------------|
| Maximum absorbed power                    | (1) n° x kW | 105,60      | 119,20        | 130,80      | 148,00      | 162,00      |
| Maximum absorbed current                  | (2) n° x A  | 180,3       | 208,5         | 232,6       | 247,3       | 266,0       |
| Maximum startup current                   | (3) n° x A  | 353,2       | 414,3         | 438,4       | 505,8       | 524,5       |
| Maximum startup current with soft.starter | (3) n° x A  | 256,50      | 296,80        | 313,00      | 350,50      | 383,90      |
| Fan nominal power                         | kW          | 3 x 2,0     | 4 x 2,0       | 4 x 2,0     | 4 x 2,0     | 5 x 2,0     |
| Fan nominal current                       | A           | 3 x 4,0     | 4 x 4,0       | 4 x 4,0     | 4 x 4,0     | 5 x 4,0     |
| Main power supply                         | V/ph/Hz     |             | 400/3~/50 ±5% |             |             |             |
| Auxilliary power supply                   | V/ph/Hz     |             | 230/1~/50 ±5% |             |             |             |

(1)Electrical power that must be supplied by the mains to power the unit.

(2)Maximum current before safety cut-outs stop the unit. This value is never exceeded and must be used to size the electrical supply cables and relevant safety devices (refer to electrical wiring diagram supplied with the unit)

(3)The values in brackets refer to the ST version unit (with storage tank and pumps or units with pumps only).

(4)Maximum input current calculated considering the power of the compressor with the higher power and the maximum current absorbed by all other devices

**OXFORD A - ELECTRICAL DATA**

| UNIT SIZE                               |         |         | <b>3.2</b>       | <b>4.2</b>       | <b>5.2</b>       | <b>6.2</b>       | <b>7.2</b>        |
|---|---------|---------|------------------|------------------|------------------|------------------|-------------------|
| Maximum absorbed power                  | (1),(3) | kW      | 20,96<br>(21,86) | 24,16<br>(25,06) | 26,96<br>(28,46) | 30,76<br>(32,26) | 35,34<br>(36,84)  |
| Maximum absorbed current                | (2),(3) | A       | 38,9<br>(41,5)   | 46,9<br>(49,5)   | 48,9<br>(52,4)   | 54,9<br>(58,4)   | 64,3<br>(67,8)    |
| Maximum input current                   | (4)     | A       | 120,9<br>(121,8) | 168,9<br>(169,8) | 169,9<br>(171,4) | 177,9<br>(179,4) | 195,3<br>(196,8)  |
| Maximum input current with soft-starter | (4)     | A       | 82,1<br>(84,71)  | 90,9<br>(93,51)  | 98,4<br>(101,1)  | 100,7<br>(103,4) | 119,7<br>(123,19) |
| Fan nominal power                       | n° x kW | 2 x 0,8 | 2 x 0,8          | 2 x 0,8          | 2 x 0,8          | 3 x 0,8          |                   |
| Fan nominal current                     | n° x A  | 2 x 3,4 | 2 x 3,4          | 2 x 3,4          | 2 x 3,4          | 3 x 3,4          |                   |
| Pump motor nominal power                | kW      | 0,9     | 0,9              | 1,5              | 1,5              | 1,5              |                   |
| Pump motor nominal current              | A       | 2,61    | 2,61             | 3,49             | 3,49             | 3,49             |                   |
| Main power supply                       | V/ph/Hz |         |                  | 400/3N~/50 ±5%   |                  |                  |                   |
| Auxiliary power supply                  | V/ph/Hz |         |                  | 230/1~/50 ±5%    |                  |                  |                   |

| UNIT SIZE                               |         |                | <b>8.2</b>        | <b>9.2</b>        | <b>10.2</b>       | <b>12.2</b>       |
|---|---------|----------------|-------------------|-------------------|-------------------|-------------------|
| Maximum absorbed power                  | (1),(3) | kW             | 39,54<br>(41,04)  | 48,20<br>(50,05)  | 55,20<br>(57,40)  | 61,60<br>(63,80)  |
| Maximum absorbed current                | (2),(3) | A              | 74,3<br>(77,8)    | 82,0<br>(87,0)    | 92,0<br>(96,8)    | 104,0<br>(108,8)  |
| Maximum input current                   | (4)     | A              | 237,3<br>(238,8)  | 255,0<br>(256,85) | 265,0<br>(267,2)  | 310,0<br>(312,2)  |
| Maximum input current with soft-starter | (4)     | A              | 145,0<br>(148,49) | 173,3<br>(178,28) | 179,5<br>(184,28) | 207,7<br>(212,48) |
| Fan nominal power                       | n° x kW | 3 x 0,8        | 2 x 2,0           | 2 x 2,0           | 2 x 2,0           | 2 x 2,0           |
| Fan nominal current                     | n° x A  | 3 x 3,4        | 2 x 4,0           | 2 x 4,0           | 2 x 4,0           | 2 x 4,0           |
| Pump motor nominal power                | kW      | 1,5            | 1,85              | 2,2               | 2,2               |                   |
| Pump motor nominal current              | A       | 3,49           | 4,98              | 4,78              | 4,78              | 4,78              |
| Main power supply                       | V/ph/Hz | 400/3N~/50 ±5% |                   | 400/3~/50 ±5%     |                   |                   |
| Auxiliary power supply                  | V/ph/Hz | 230/1~/50 ±5%  |                   | 230/1~/50 ±5%     |                   |                   |

(1)Electrical power that must be supplied by the mains to power the unit.

(2)Maximum current before safety cut-outs stop the unit. This value is never exceeded and must be used to size the electrical supply cables and relevant safety devices (refer to electrical wiring diagram supplied with the unit)

(3)The values in brackets refer to the ST version unit (with storage tank and pumps or units with pumps only).

(4)Maximum input current calculated considering the power of the compressor with the higher power and the maximum current absorbed by all other devices



## OXFORD - HEATING CAPACITY

| Model | CONDENSER INGOING WATER TEMPERATURE [°C] |         |       |       |       |       |       |       |       |       |
|-------|--|---------|-------|-------|-------|-------|-------|-------|-------|-------|
|       | Ta<br>[°C]                               | RH<br>% | 30    |       | 35    |       | 40    |       | 43    |       |
|       |  |         | Pt    | Pe    | Pt    | Pe    | Pt    | Pe    | Pt    | Pe    |
| 3.2   | -5                                       | 90      | 32,6  | 9,5   | 32,7  | 10,7  | -     | -     | -     | -     |
|       | 0  | 90      | 36,8  | 9,7   | 36,8  | 11    | 36,8  | 12,4  | -     | -     |
|       | 5  | 80      | 40,6  | 10    | 40,5  | 11,2  | 40,3  | 12,7  | 40,2  | 13,6  |
|       | 8  | 70      | 42,9  | 10,2  | 42,6  | 11,5  | 42,3  | 12,9  | 42,2  | 13,8  |
|       | 10                                       | 70      | 44,6  | 10,4  | 44,5  | 11,7  | 44,1  | 13,1  | 43,9  | 14    |
| 4.2   | 15                                       | 70      | 49,5  | 10,9  | 49,2  | 12,2  | 48,8  | 13,7  | 48,5  | 14,7  |
|       | -5                                       | 90      | 37,3  | 11,1  | 37,3  | 12,5  | -     | -     | -     | -     |
|       | 0  | 90      | 41,9  | 11,5  | 41,9  | 12,9  | 41,9  | 14,5  | -     | -     |
|       | 5  | 80      | 46,1  | 11,7  | 46,1  | 13,1  | 45,9  | 14,8  | 45,9  | 15,9  |
|       | 8  | 70      | 48,6  | 11,8  | 48,6  | 13,2  | 48,3  | 14,9  | 48,2  | 16    |
| 5.2   | 10                                       | 70      | 50,6  | 11,8  | 50,5  | 13,3  | 50,3  | 14,9  | 50,1  | 16    |
|       | 15                                       | 70      | 56    | 12    | 55,8  | 13,5  | 55,5  | 15,2  | 55,3  | 16,2  |
|       | -5                                       | 90      | 43,8  | 13,2  | 43,8  | 14,9  | -     | -     | -     | -     |
|       | 0  | 90      | 49,3  | 13,4  | 49,2  | 15,1  | 49,2  | 17    | -     | -     |
|       | 5  | 80      | 54,4  | 13,6  | 54,2  | 15,3  | 53,9  | 17,2  | 53,7  | 18,5  |
| 6.2   | 8  | 70      | 57,2  | 13,6  | 57,1  | 15,4  | 56,8  | 17,4  | 56,5  | 18,7  |
|       | 10                                       | 70      | 59,7  | 13,7  | 59,4  | 15,5  | 59    | 17,5  | 58,6  | 18,8  |
|       | 15                                       | 70      | 66,7  | 13,9  | 66,2  | 15,7  | 65,2  | 17,7  | 64,9  | 19    |
|       | -5                                       | 90      | 50,2  | 15,1  | 50,1  | 16,8  | -     | -     | -     | -     |
|       | 0  | 90      | 56,4  | 15,3  | 56,3  | 17,1  | 56,2  | 19,1  | -     | -     |
| 7.2   | 5  | 80      | 62,3  | 15,4  | 61,9  | 17,3  | 61,5  | 19,3  | 61,4  | 20,6  |
|       | 8  | 70      | 65,4  | 15,5  | 65,2  | 17,3  | 64,9  | 19,4  | 64,5  | 20,7  |
|       | 10                                       | 70      | 68,2  | 15,6  | 67,8  | 17,4  | 67,3  | 19,5  | 66,9  | 20,8  |
|       | 15                                       | 70      | 76,1  | 15,8  | 75,4  | 17,6  | 74,3  | 19,7  | 73,9  | 21,1  |
|       | -5                                       | 90      | 52,94 | 16,94 | 53,35 | 18,98 | 53,94 | 21,32 | 54,37 | 22,9  |
| 8.2   | 0  | 90      | 59,25 | 17,04 | 59,46 | 19,03 | 59,67 | 21,31 | 59,95 | 22,85 |
|       | 5  | 80      | 65,49 | 17,17 | 65,54 | 19,13 | 65,62 | 21,38 | 65,7  | 22,89 |
|       | 8  | 70      | 69,03 | 17,25 | 68,76 | 19,19 | 68,72 | 21,42 | 68,73 | 22,92 |
|       | 10                                       | 70      | 71,91 | 17,31 | 71,74 | 19,25 | 71,6  | 21,47 | 71,53 | 22,97 |
|       | 15                                       | 70      | 79,84 | 17,51 | 79,4  | 19,43 | 78,95 | 21,62 | 78,7  | 23,1  |
| 9.2   | -5                                       | 90      | 66,8  | 20,5  | 66,8  | 22,9  | -     | -     | -     | -     |
|       | 0  | 90      | 74,8  | 20,6  | 74,7  | 23    | 74,6  | 25,7  | -     | -     |
|       | 5  | 80      | 82,3  | 20,7  | 81,8  | 23,1  | 81,5  | 25,8  | 81,2  | 27,6  |
|       | 8  | 70      | 86,8  | 20,8  | 86,3  | 23,2  | 85,5  | 25,9  | 85    | 27,6  |
|       | 10                                       | 70      | 90,4  | 20,9  | 89,6  | 23,3  | 88,7  | 26    | 88,3  | 27,7  |
| 10.2  | 15                                       | 70      | 100,3 | 21,2  | 99,4  | 23,5  | 98,4  | 26,2  | 97,6  | 28    |
|       | -5                                       | 90      | 76,9  | 23,6  | 77,2  | 26,4  | -     | -     | -     | -     |
|       | 0  | 90      | 86    | 23,9  | 86,1  | 26,7  | 86,4  | 30    | -     | -     |
|       | 5  | 80      | 94,7  | 24,1  | 94,4  | 27    | 94,2  | 30,3  | 94,2  | 32,5  |
|       | 8  | 70      | 99,6  | 24,3  | 99,4  | 27,1  | 99,1  | 30,4  | 98,8  | 32,6  |
| 12.2  | 10                                       | 70      | 103,8 | 24,5  | 103,3 | 27,3  | 102,7 | 30,6  | 102,2 | 32,7  |
|       | 15                                       | 70      | 116   | 24,9  | 114,8 | 27,7  | 113,3 | 31    | 112,8 | 33,1  |
|       | -5                                       | 90      | 88,2  | 26,4  | 88,7  | 29,7  | -     | -     | -     | -     |
|       | 0  | 90      | 98,7  | 26,9  | 99    | 30,1  | 99,5  | 34    | -     | -     |
|       | 5  | 80      | 108,9 | 27,3  | 108,5 | 30,5  | 108,6 | 34,4  | 108,6 | 37    |
| 13.2  | 8  | 70      | 114,4 | 27,5  | 114,3 | 30,8  | 114   | 34,6  | 113,9 | 37,2  |
|       | 10                                       | 70      | 119,6 | 27,8  | 119   | 31    | 118,2 | 34,8  | 117,9 | 37,3  |
|       | 15                                       | 70      | 133,1 | 28,3  | 132,1 | 31,5  | 131,4 | 35,3  | 129,8 | 37,8  |
|       | -5                                       | 90      | 100,6 | 29,8  | 100,8 | 33,4  | -     | -     | -     | -     |
|       | 0  | 90      | 113   | 30,3  | 112,8 | 33,8  | 112,8 | 38    | -     | -     |
| 12.2  | 5  | 80      | 124,1 | 30,7  | 123,6 | 34,3  | 123,1 | 38,4  | 122,9 | 41,2  |
|       | 8  | 70      | 131,2 | 31    | 130,4 | 34,5  | 129,5 | 38,7  | 128,6 | 41,4  |
|       | 10                                       | 70      | 136,6 | 31,1  | 135,4 | 34,7  | 134,1 | 38,9  | 133,2 | 41,6  |
|       | 15                                       | 70      | 152,3 | 31,7  | 150,3 | 35,3  | 148,6 | 39,4  | 147,4 | 42,2  |
|       | -5                                       | 90      | 110,2 | 32,9  | 110,5 | 36,7  | -     | -     | -     | -     |
| 13.2  | 0  | 90      | 123,5 | 33,3  | 123,5 | 37,1  | 123,5 | 41,5  | -     | -     |
|       | 5  | 80      | 135,7 | 33,7  | 135,2 | 37,5  | 134,7 | 42    | 134,4 | 44,9  |
|       | 8  | 70      | 143,1 | 33,9  | 142,6 | 37,8  | 141,7 | 42,2  | 141   | 45,2  |
|       | 10                                       | 70      | 149,2 | 34    | 148,2 | 38    | 147   | 42,4  | 146   | 45,4  |
|       | 15                                       | 70      | 166,7 | 34,5  | 165,3 | 38,5  | 162,5 | 43    | 161,4 | 45,9  |

Pt: heating capacity [kW]

Pe: electrical power absorbed by the compressors [kW]

Ta: evaporator intake air temperature dry bulb [°C]

RH : evaporator intake air relative humidity [%]

**OXFORD - RECOVERY CAPACITY**

| Model | To<br>[°C] | CONDENSER INGOING WATER TEMPERATURE [°C] |       |        |       |       |       |       |       |       |       |       |       |
|-------|------------|--|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|       |            | 35                                       |       |        | 40    |       |       | 45    |       |       | 48    |       |       |
|       |            | Pf                                       | Pe    | Pr     | Pf    | Pe    | Pr    | Pf    | Pe    | Pr    | Pf    | Pe    | Pr    |
| 3.2   | 5          | 40                                       | 11,3  | 51,3   | 37,3  | 12,7  | 50    | 34,3  | 14,2  | 48,5  | 32,4  | 15,2  | 47,6  |
|       | 7          | 42,7                                     | 11,4  | 54,1   | 39,7  | 12,8  | 52,6  | 36,6  | 14,4  | 51    | 34,6  | 15,4  | 50    |
|       | 10         | 47                                       | 11,6  | 58,5   | 43,8  | 13    | 56,8  | 40,4  | 14,5  | 54,9  | 38,2  | 15,6  | 53,7  |
| 4.2   | 5          | 45,6                                     | 12,9  | 58,5   | 42,5  | 14,5  | 57    | 39,2  | 16,3  | 55,5  | 37,2  | 17,4  | 54,6  |
|       | 7          | 48,6                                     | 13    | 61,6   | 45,4  | 14,6  | 60    | 42    | 16,4  | 58,3  | 39,8  | 17,5  | 57,3  |
|       | 10         | 53,4                                     | 13,2  | 66,6   | 49,9  | 14,8  | 64,7  | 46,3  | 16,6  | 62,8  | 44    | 17,7  | 61,7  |
| 5.2   | 5          | 51,9                                     | 15,2  | 67,1   | 48,2  | 17,1  | 65,3  | 44,1  | 19,2  | 63,4  | 41,5  | 20,6  | 62,2  |
|       | 7          | 55,5                                     | 15,3  | 70,8   | 51,5  | 17,2  | 68,7  | 47,3  | 19,3  | 66,6  | 44,6  | 20,7  | 65,3  |
|       | 10         | 61                                       | 15,4  | 76,5   | 56,9  | 17,3  | 74,2  | 52,3  | 19,5  | 71,8  | 49,4  | 20,9  | 70,3  |
| 6.2   | 5          | 59,2                                     | 17,4  | 76,6   | 55    | 19,5  | 74,5  | 50,6  | 21,8  | 72,3  | 47,7  | 23,2  | 71    |
|       | 7          | 63,2                                     | 17,5  | 80,7   | 58,9  | 19,5  | 78,4  | 54,2  | 21,8  | 76    | 51,2  | 23,3  | 74,5  |
|       | 10         | 69,5                                     | 17,6  | 87,2   | 64,9  | 19,7  | 84,6  | 59,9  | 21,9  | 81,8  | 56,7  | 23,4  | 80,1  |
| 7.2   | 5          | 72,13                                    | 17,65 | 89,77  | 68,24 | 19,51 | 87,75 | 64,02 | 21,63 | 85,65 | 61,32 | 23,06 | 84,38 |
|       | 7          | 76,88                                    | 17,77 | 94,65  | 72,82 | 19,62 | 92,45 | 68,42 | 21,74 | 90,16 | 65,6  | 23,17 | 88,77 |
|       | 10         | 84,43                                    | 17,95 | 102,38 | 80,03 | 19,81 | 99,84 | 75,22 | 21,93 | 97,15 | 72,15 | 23,35 | 95,5  |
| 8.2   | 5          | 80,5                                     | 22,8  | 103,3  | 74,9  | 25,4  | 100,3 | 68,8  | 28,3  | 97,1  | 64,9  | 30,1  | 95,1  |
|       | 7          | 86,1                                     | 23    | 109    | 80    | 25,5  | 105,5 | 73,7  | 28,4  | 102,1 | 69,6  | 30,3  | 99,8  |
|       | 10         | 94,9                                     | 23,2  | 118,1  | 88,4  | 25,7  | 114,1 | 81,3  | 28,6  | 109,9 | 76,8  | 30,5  | 107,2 |
| 9.2   | 5          | 91,8                                     | 27,3  | 119    | 85,2  | 30,3  | 115,5 | 78    | 33,8  | 111,9 | 73,7  | 36,2  | 109,8 |
|       | 7          | 98,1                                     | 27,5  | 125,6  | 91,1  | 30,5  | 121,6 | 83,5  | 34    | 117,5 | 78,7  | 36,3  | 115   |
|       | 10         | 108,2                                    | 27,8  | 136    | 100,6 | 30,8  | 131,4 | 92,3  | 34,3  | 126,5 | 87,1  | 36,5  | 123,6 |
| 10.2  | 5          | 104,9                                    | 31,2  | 136,1  | 97,4  | 34,8  | 132,2 | 89,3  | 38,9  | 128,1 | 84    | 41,6  | 125,6 |
|       | 7          | 112,2                                    | 31,4  | 143,6  | 104,2 | 35    | 139,2 | 95,5  | 39,1  | 134,6 | 89,9  | 41,8  | 131,7 |
|       | 10         | 123,8                                    | 31,8  | 155,6  | 115,1 | 35,3  | 150,4 | 105,5 | 39,4  | 144,9 | 99,4  | 42    | 141,4 |
| 12.2  | 5          | 116,4                                    | 33,6  | 150    | 108,1 | 37,4  | 145,6 | 99,1  | 41,8  | 140,9 | 93,3  | 44,7  | 138   |
|       | 7          | 124,4                                    | 33,8  | 158,2  | 115,6 | 37,7  | 153,2 | 106   | 42    | 148   | 99,9  | 44,9  | 144,8 |
|       | 10         | 137,1                                    | 34,1  | 171,3  | 127,5 | 38    | 165,4 | 117   | 42,3  | 159,3 | 110,3 | 45,2  | 155,5 |
| 13.2  | 5          | 126                                      | 37,4  | 163,5  | 116,9 | 41,8  | 158,7 | 107   | 46,6  | 153,6 | 100,7 | 49,7  | 150,4 |
|       | 7          | 134,6                                    | 37,7  | 172,2  | 124,9 | 42    | 166,9 | 114,4 | 46,8  | 161,2 | 107,7 | 50    | 157,6 |
|       | 10         | 148,2                                    | 38    | 186,2  | 137,6 | 42,3  | 179,9 | 126,1 | 47,2  | 173,3 | 118,8 | 50,3  | 169,1 |

Pf:cooling capacity [kW]

Pe:electrical power absorbed by the compressors [kW]

Pr:recovery condenser heating capacity [kW]

To:evaporator outgoing water temperature [°C]

## OXFORD /LE - COOLING CAPACITY

| Model | Tev | EXTERNAL AIR TEMPERATURE [°C] |       |       |       |       |       |       |       |       |       |
|-------|-----|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|       |     | 25                            |       | 30    |       | 35    |       | 40    |       | 43    |       |
|       |     | [°C]                          | Pf    | Pe    | Pf    | Pe    | Pf    | Pe    | Pf    | Pe    | Pf    |
| 3.2   | 0   | 41,4                          | 9,4   | 38,9  | 10,6  | 36,2  | 11,9  | 33,3  | 13,3  | 31,5  | 14,3  |
|       | 2,5 | 44,8                          | 9,6   | 42,2  | 10,8  | 39,3  | 12,1  | 36,2  | 13,5  | 34,3  | 14,5  |
|       | 5   | 48,3                          | 9,8   | 45,5  | 11    | 42,5  | 12,3  | 39,3  | 13,8  | 37,2  | 14,7  |
|       | 7,5 | 52                            | 10,1  | 49,1  | 11,2  | 45,9  | 12,6  | 42,4  | 14    | -     | -     |
|       | 10  | 55,7                          | 10,4  | 52,6  | 11,5  | 49,3  | 12,8  | 45,7  | 14,3  | -     | -     |
| 4.2   | 0   | 46,8                          | 11,1  | 44    | 12,4  | 41    | 13,9  | 37,9  | 15,5  | 35,9  | 16,6  |
|       | 2,5 | 50,5                          | 11,4  | 47,5  | 12,7  | 44,4  | 14,1  | 41,1  | 15,8  | 39    | 16,9  |
|       | 5   | 54,4                          | 11,7  | 51,2  | 13    | 47,9  | 14,5  | 44,4  | 16,1  | 42,2  | 17,2  |
|       | 7,5 | 58,5                          | 12    | 55    | 13,4  | 51,5  | 14,8  | 47,8  | 16,5  | -     | -     |
|       | 10  | 62,6                          | 12,4  | 59    | 13,8  | 55,2  | 15,2  | 51,3  | 16,9  | -     | -     |
| 5.2   | 0   | 54,2                          | 13,1  | 50,8  | 14,7  | 47,1  | 16,6  | 43,1  | 18,6  | 40,6  | 19,9  |
|       | 2,5 | 58,5                          | 13,5  | 54,9  | 15,1  | 51    | 16,9  | 46,8  | 18,9  | 44,1  | 20,2  |
|       | 5   | 63                            | 13,8  | 59,1  | 15,5  | 55    | 17,3  | 50,5  | 19,3  | 47,7  | 20,6  |
|       | 7,5 | 67,6                          | 14,2  | 63,5  | 15,9  | 59,1  | 17,7  | 54,4  | 19,7  | -     | -     |
|       | 10  | 72,4                          | 14,6  | 68    | 16,3  | 63,4  | 18,1  | 58,4  | 20,1  | -     | -     |
| 6.2   | 0   | 63,5                          | 14,8  | 59,8  | 16,5  | 55,7  | 18,4  | 51,3  | 20,5  | 48,6  | 21,9  |
|       | 2,5 | 68,6                          | 15,1  | 64,6  | 16,8  | 60,3  | 18,7  | 55,7  | 20,8  | 52,7  | 22,2  |
|       | 5   | 73,9                          | 15,4  | 69,6  | 17,1  | 65,1  | 19    | 60,2  | 21,1  | 57,1  | 22,5  |
|       | 7,5 | 79,3                          | 15,8  | 74,9  | 17,5  | 70,1  | 19,4  | 64,9  | 21,5  | -     | -     |
|       | 10  | 85                            | 16,2  | 80,3  | 17,9  | 75,3  | 19,8  | 69,8  | 21,9  | -     | -     |
| 7.2   | 0   | 70,02                         | 18,4  | 65,62 | 20,26 | 60,88 | 22,4  | 55,77 | 24,87 | 52,52 | 26,54 |
|       | 2,5 | 75,57                         | 18,9  | 70,81 | 20,79 | 65,69 | 22,95 | 60,19 | 25,43 | 56,69 | 27,1  |
|       | 5   | 81,33                         | 19,44 | 76,19 | 21,36 | 70,67 | 23,54 | 64,76 | 26,04 | 60,99 | 27,71 |
|       | 7,5 | 87,3                          | 20,02 | 81,76 | 21,97 | 75,82 | 24,18 | 69,46 | 26,7  | 65,43 | 28,38 |
|       | 10  | 93,47                         | 20,64 | 87,5  | 22,62 | 81,12 | 24,86 | 74,3  | 27,41 | 69,97 | 29,11 |
| 8.2   | 0   | 82,4                          | 19    | 77,7  | 20,9  | 72,6  | 23,2  | 67,1  | 25,8  | 63,6  | 27,5  |
|       | 2,5 | 89,5                          | 19,3  | 84,4  | 21,2  | 78,9  | 23,5  | 72,9  | 26,1  | 69,1  | 27,8  |
|       | 5   | 96,9                          | 19,6  | 91,4  | 21,6  | 85,5  | 23,9  | 79    | 26,5  | 75    | 28,2  |
|       | 7,5 | 104,8                         | 20    | 98,8  | 22    | 92,3  | 24,3  | 85,4  | 26,9  | -     | -     |
|       | 10  | 112,9                         | 20,3  | 106,4 | 22,4  | 99,5  | 24,8  | 92,1  | 27,4  | -     | -     |
| 9.2   | 0   | 94,5                          | 23,2  | 88,9  | 25,5  | 82,8  | 28,3  | 76,2  | 31,6  | 72    | 33,7  |
|       | 2,5 | 102,5                         | 23,7  | 96,3  | 26,1  | 89,7  | 28,9  | 82,6  | 32,1  | 78,1  | 34,2  |
|       | 5   | 110,7                         | 24,2  | 104,2 | 26,6  | 97    | 29,4  | 89,4  | 32,6  | 84,5  | 34,7  |
|       | 7,5 | 119,5                         | 24,7  | 112,4 | 27,2  | 104,7 | 30    | 96,4  | 33,2  | -     | -     |
|       | 10  | 128,7                         | 25,3  | 121   | 27,8  | 112,7 | 30,7  | 103,8 | 33,9  | -     | -     |
| 10.2  | 0   | 107                           | 27,7  | 100,4 | 30,5  | 93,3  | 33,9  | 85,5  | 37,8  | 80,6  | 40,4  |
|       | 2,5 | 115,9                         | 28,4  | 108,7 | 31,3  | 100,9 | 34,6  | 92,5  | 38,5  | 87,2  | 41,1  |
|       | 5   | 125,1                         | 29,1  | 117,3 | 32    | 108,8 | 35,4  | 99,8  | 39,2  | 94    | 41,8  |
|       | 7,5 | 134,8                         | 29,8  | 126,3 | 32,8  | 117,2 | 36,2  | 107,4 | 40    | -     | -     |
|       | 10  | 144,9                         | 30,6  | 135,7 | 33,6  | 125,8 | 37    | 115,3 | 40,8  | -     | -     |
| 12.2  | 0   | 122,4                         | 29,3  | 114,9 | 32,3  | 106,9 | 35,9  | 98,1  | 40,1  | 92,5  | 42,8  |
|       | 2,5 | 132,5                         | 29,9  | 124,4 | 33    | 115,6 | 36,6  | 106,1 | 40,8  | 100,2 | 43,4  |
|       | 5   | 143,1                         | 30,5  | 134,4 | 33,7  | 124,7 | 37,4  | 114,6 | 41,5  | 108,2 | 44,1  |
|       | 7,5 | 154,1                         | 31,2  | 144,6 | 34,5  | 134,3 | 38,2  | 123,4 | 42,2  | -     | -     |
|       | 10  | 165,7                         | 32    | 155,4 | 35,3  | 144,4 | 38,9  | 132,6 | 43    | -     | -     |
| 13.2  | 0   | 133,1                         | 33,1  | 124,7 | 36,7  | 115,6 | 40,8  | 105,8 | 45,4  | 99,6  | 48,3  |
|       | 2,5 | 143,9                         | 33,8  | 134,7 | 37,5  | 124,7 | 41,7  | 114,3 | 46,2  | 107,7 | 49,2  |
|       | 5   | 154,9                         | 34,6  | 145   | 38,3  | 134,4 | 42,5  | 123,1 | 47,1  | 115,8 | 50,1  |
|       | 7,5 | 166,6                         | 35,4  | 155,9 | 39,2  | 144,4 | 43,4  | 132,2 | 48    | -     | -     |
|       | 10  | 178,6                         | 36,3  | 167,1 | 40,1  | 154,8 | 44,3  | 141,7 | 49    | -     | -     |

Pf:cooling capacity [kW]

Pe:electrical power absorbed by the compressors [kW]

TO:evaporator outgoing water temperature [°]











**OXFORD A - RECOVERY CAPACITY**

| Model | To<br>[°C] | CONDENSER INGOING WATER TEMPERATURE [°C] |      |       |       |      |       |       |      |       |       |      |       |
|-------|------------|--|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|
|       |            | 35                                       |      |       | 40    |      |       | 45    |      |       | 48    |      |       |
|       |            | Pf                                       | Pe   | Pr    | Pf    | Pe   | Pr    | Pf    | Pe   | Pr    | Pf    | Pe   | Pr    |
| 3.2   | 5          | 47,3                                     | 10,8 | 58,1  | 44,6  | 11,9 | 56,5  | 41,8  | 13,1 | 54,9  | 40,1  | 13,9 | 54,0  |
|       | 7          | 50,5                                     | 10,9 | 61,4  | 47,7  | 12,0 | 59,7  | 44,7  | 13,2 | 57,9  | 42,9  | 14,0 | 56,9  |
|       | 10         | 55,5                                     | 11,0 | 66,5  | 52,5  | 12,1 | 64,6  | 49,3  | 13,3 | 62,6  | 47,3  | 14,2 | 61,4  |
| 4.2   | 5          | 56,4                                     | 12,8 | 69,3  | 53,7  | 14,1 | 67,8  | 50,8  | 15,5 | 66,3  | 49,0  | 16,4 | 65,4  |
|       | 7          | 60,3                                     | 13,0 | 73,2  | 57,4  | 14,2 | 71,6  | 54,3  | 15,6 | 69,9  | 52,2  | 16,5 | 68,8  |
|       | 10         | 66,3                                     | 13,2 | 79,4  | 63,0  | 14,4 | 77,4  | 59,6  | 15,8 | 75,3  | 57,4  | 16,7 | 74,1  |
| 5.2   | 5          | 61,0                                     | 14,2 | 75,2  | 57,5  | 15,7 | 73,2  | 53,9  | 17,3 | 71,2  | 51,6  | 18,4 | 70,0  |
|       | 7          | 65,1                                     | 14,3 | 79,4  | 61,5  | 15,8 | 77,3  | 57,6  | 17,4 | 75,0  | 55,2  | 18,5 | 73,7  |
|       | 10         | 71,5                                     | 14,5 | 86,0  | 67,6  | 16,0 | 83,6  | 63,5  | 17,6 | 81,1  | 60,9  | 18,7 | 79,5  |
| 6.2   | 5          | 73,8                                     | 16,3 | 90,1  | 70,1  | 18,0 | 88,1  | 66,1  | 19,9 | 86,0  | 63,6  | 21,1 | 84,7  |
|       | 7          | 78,7                                     | 16,5 | 95,1  | 74,7  | 18,1 | 92,8  | 70,5  | 20,0 | 90,5  | 67,8  | 21,2 | 89,0  |
|       | 10         | 86,1                                     | 16,6 | 102,8 | 81,9  | 18,3 | 100,2 | 77,4  | 20,2 | 97,5  | 74,5  | 21,4 | 95,9  |
| 7.2   | 5          | 79,8                                     | 18,0 | 97,8  | 75,4  | 19,9 | 95,3  | 70,6  | 22,1 | 92,7  | 67,5  | 23,6 | 91,1  |
|       | 7          | 85,2                                     | 18,2 | 103,4 | 80,4  | 20,1 | 100,5 | 75,4  | 22,2 | 97,6  | 72,1  | 23,7 | 95,8  |
|       | 10         | 93,4                                     | 18,4 | 111,8 | 88,4  | 20,3 | 108,6 | 82,9  | 22,5 | 105,3 | 79,4  | 23,9 | 103,3 |
| 8.2   | 5          | 90,8                                     | 19,9 | 110,7 | 85,2  | 22,3 | 107,5 | 79,2  | 25,0 | 104,2 | 76,1  | 26,6 | 102,6 |
|       | 7          | 96,9                                     | 20,0 | 116,8 | 90,9  | 22,4 | 113,4 | 84,8  | 25,1 | 109,9 | 81,6  | 26,5 | 108,1 |
|       | 10         | 106,3                                    | 20,1 | 126,4 | 100,2 | 22,5 | 122,7 | 93,8  | 25,1 | 118,9 | 90,4  | 26,5 | 116,9 |
| 9.2   | 5          | 110,0                                    | 23,4 | 133,4 | 103,2 | 26,4 | 129,6 | 96,3  | 29,6 | 125,9 | 92,6  | 31,4 | 124,0 |
|       | 7          | 117,2                                    | 23,6 | 140,8 | 110,5 | 26,4 | 136,9 | 103,1 | 29,6 | 132,7 | 99,2  | 31,4 | 130,6 |
|       | 10         | 128,6                                    | 23,8 | 152,3 | 121,6 | 26,5 | 148,0 | 113,8 | 29,7 | 143,5 | 109,7 | 31,4 | 141,1 |
| 10.2  | 5          | 123,9                                    | 26,8 | 150,7 | 116,5 | 30,2 | 146,7 | 108,9 | 34,0 | 142,9 | 104,7 | 36,1 | 140,8 |
|       | 7          | 132,1                                    | 27,0 | 159,1 | 124,7 | 30,2 | 154,9 | 116,5 | 34,0 | 150,5 | 112,1 | 36,1 | 148,2 |
|       | 10         | 145,0                                    | 27,1 | 172,2 | 137,2 | 30,3 | 167,5 | 128,5 | 34,0 | 162,5 | 123,8 | 36,2 | 160,0 |
| 12.2  | 5          | 148,5                                    | 31,3 | 179,7 | 139,8 | 34,9 | 174,7 | 130,5 | 39,0 | 169,5 | 125,4 | 41,3 | 166,7 |
|       | 7          | 158,3                                    | 31,5 | 189,7 | 149,5 | 34,9 | 184,4 | 139,7 | 39,0 | 178,7 | 134,4 | 41,3 | 175,7 |
|       | 10         | 174,1                                    | 31,6 | 205,7 | 164,7 | 35,0 | 199,7 | 154,1 | 39,1 | 193,2 | 148,5 | 41,4 | 189,8 |

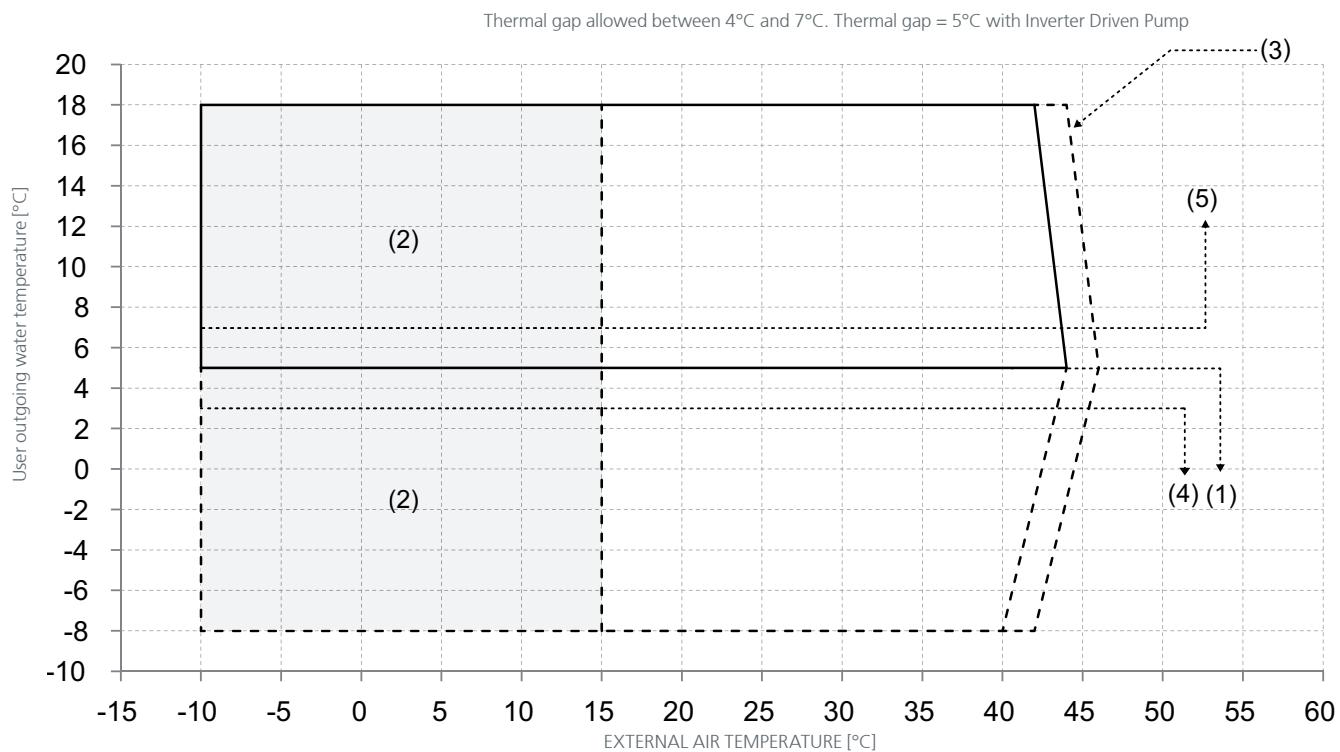
Pf:cooling capacity [kW]

Pe:electrical power absorbed by the compressors [kW]

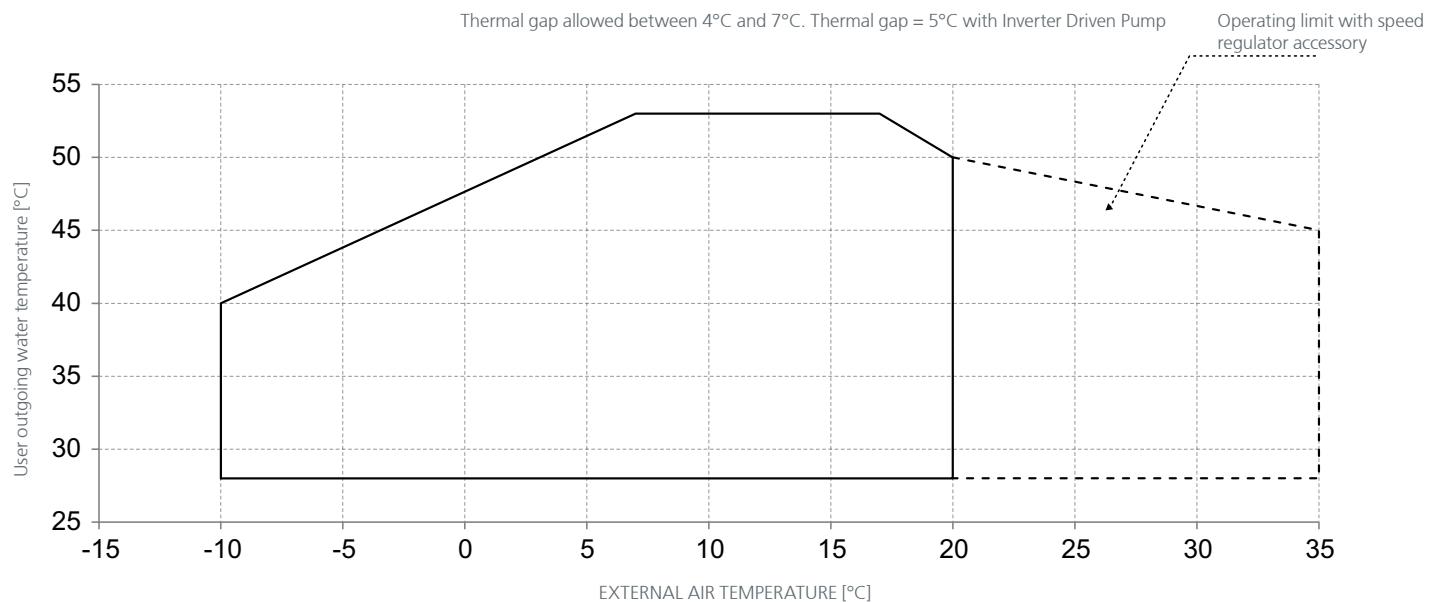
Pr:recovery condenser heating capacity [kW]

To:evaporator outgoing water temperature [°C]

## OPERATING LIMITS COOLING - OXFORD CH-HP



## OPERATING LIMITS HEATING - OXFORD CH-HP

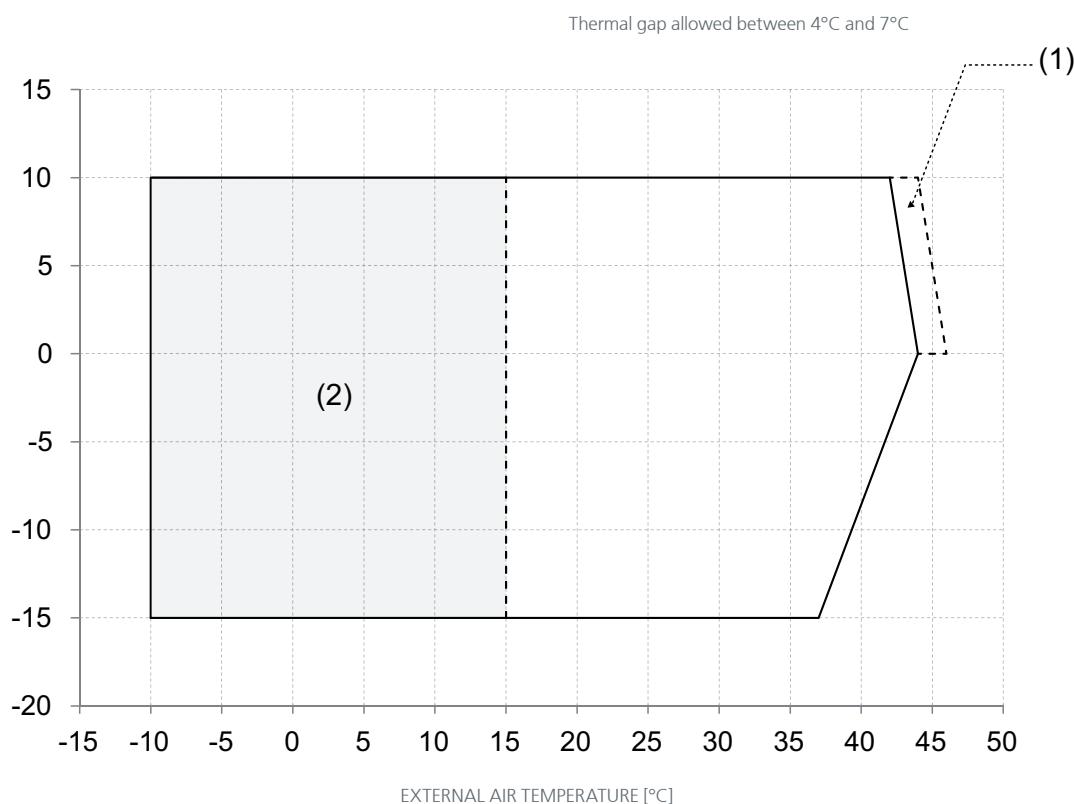


(1) Working limit in case of forced capacity control

(2) With low ambient temperature Kit

## OPERATING LIMITS COOLING - OXFORD LE - LE/HP

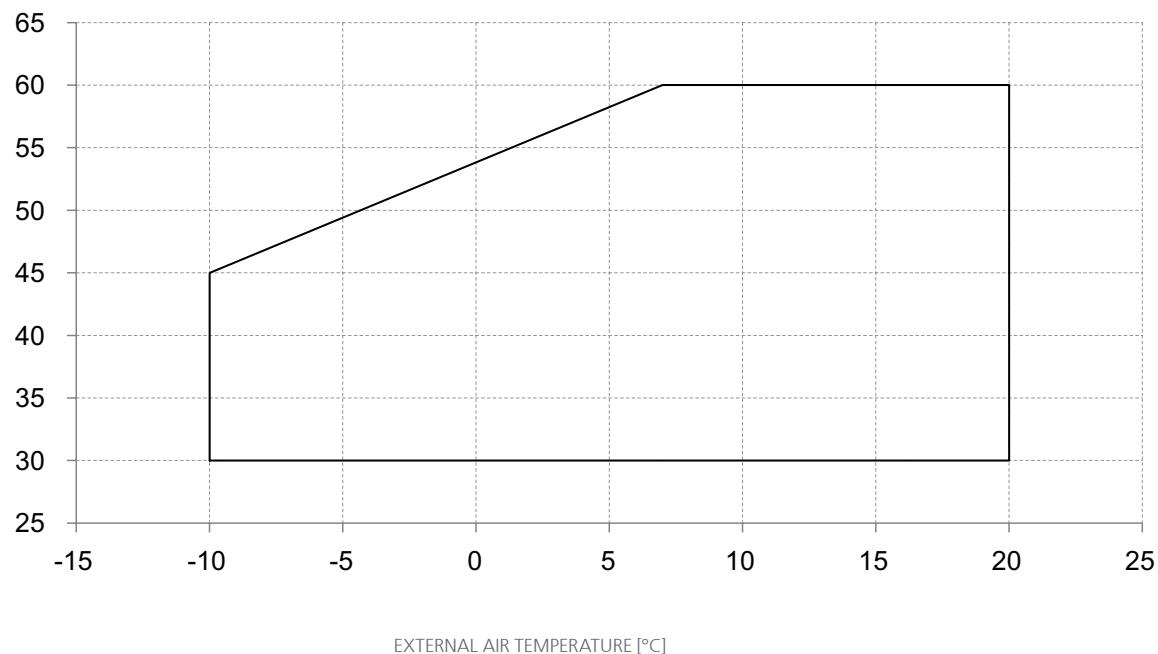
Evaporation temperature [°C]



## OPERATING LIMITS HEATING - OXFORD LE - LE/HP

Condensation temperature [°C]

Thermal gap allowed between 4°C and 7°C



(1) Workin limit in case of forced capacity control

(2) With low ambient temperature Kit







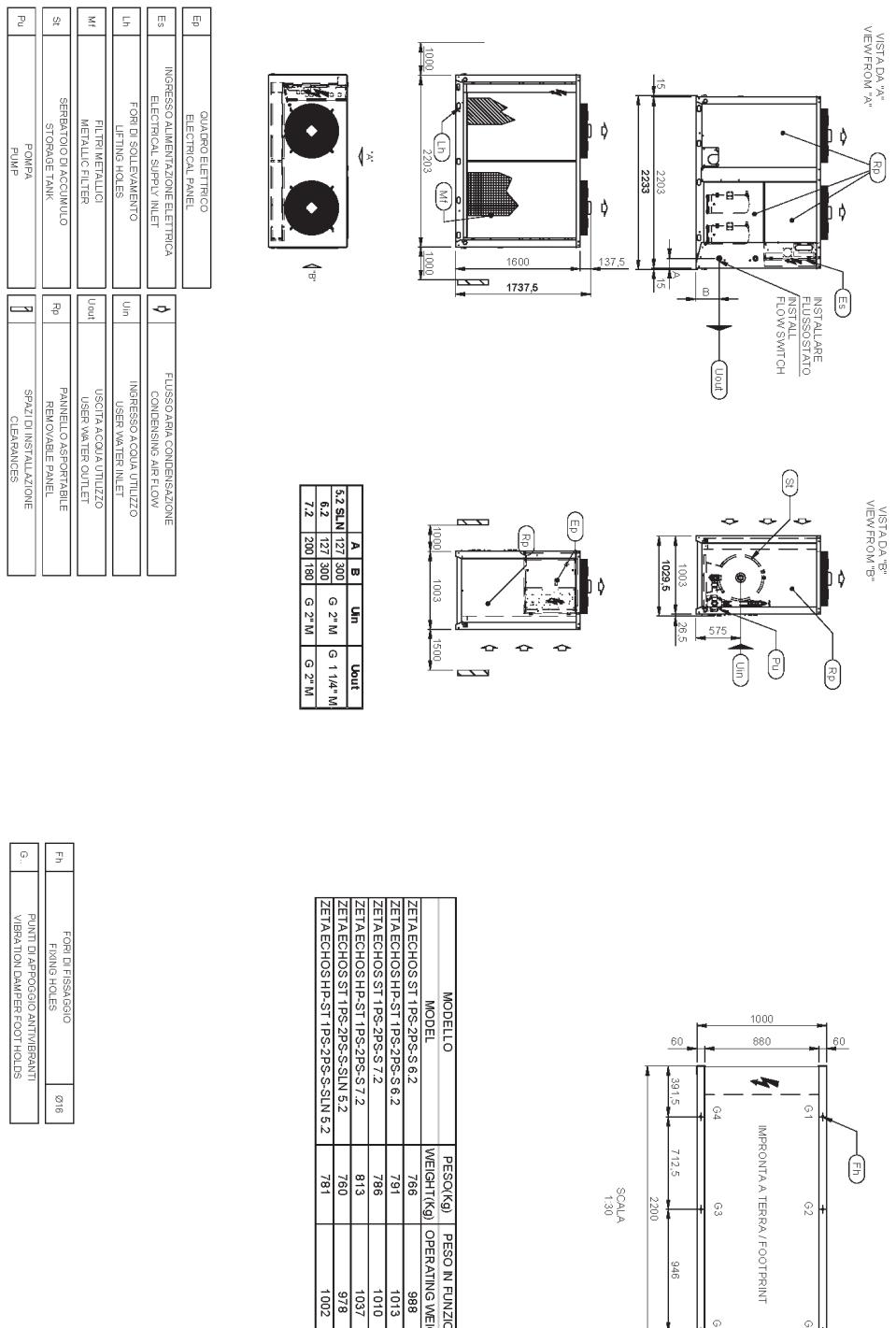






## DIMENSIONAL DRAWING

### OXFORD 6.2 - 7.2 2PS - 5.2 SLN 2PS

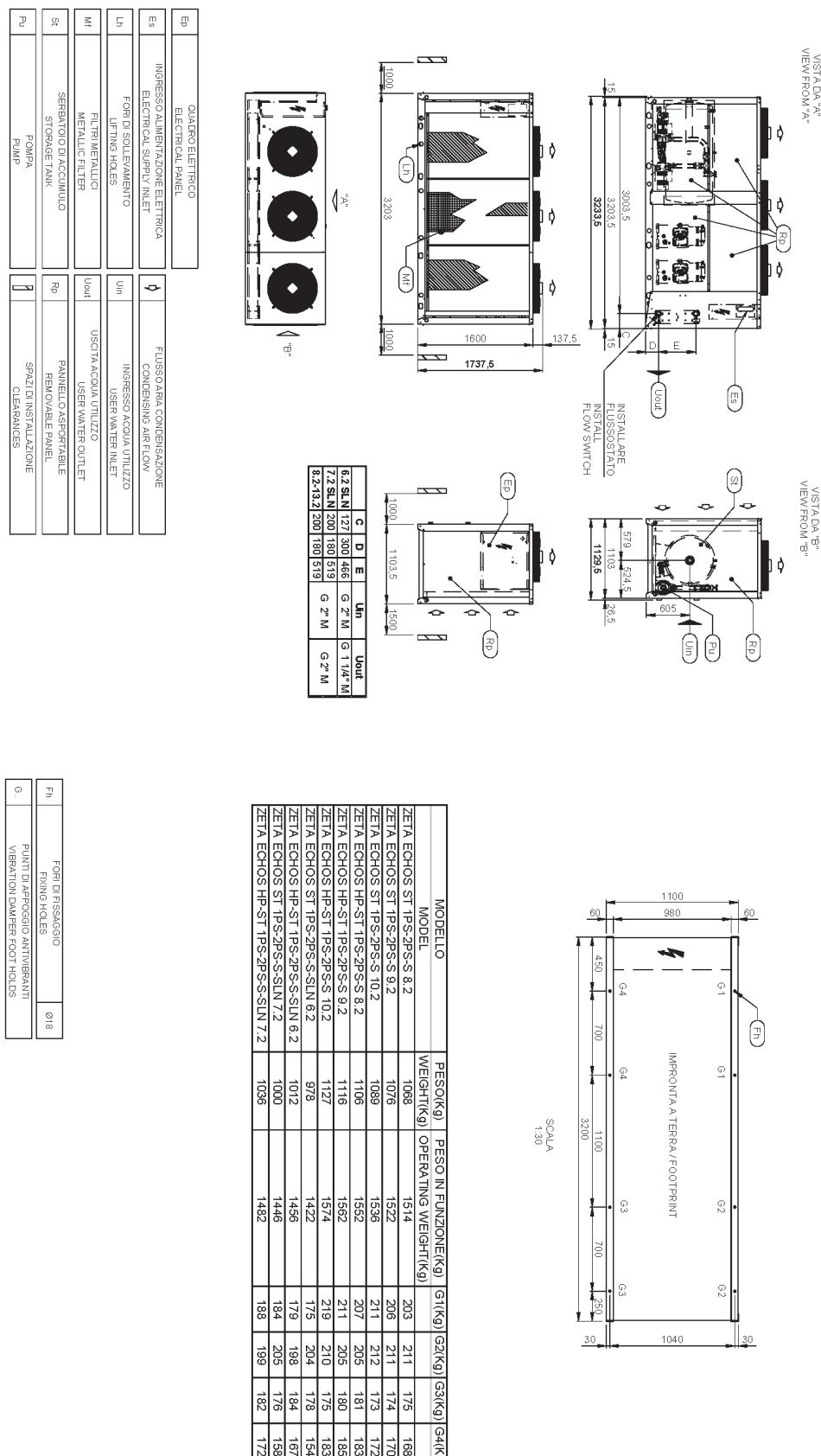


A48209E



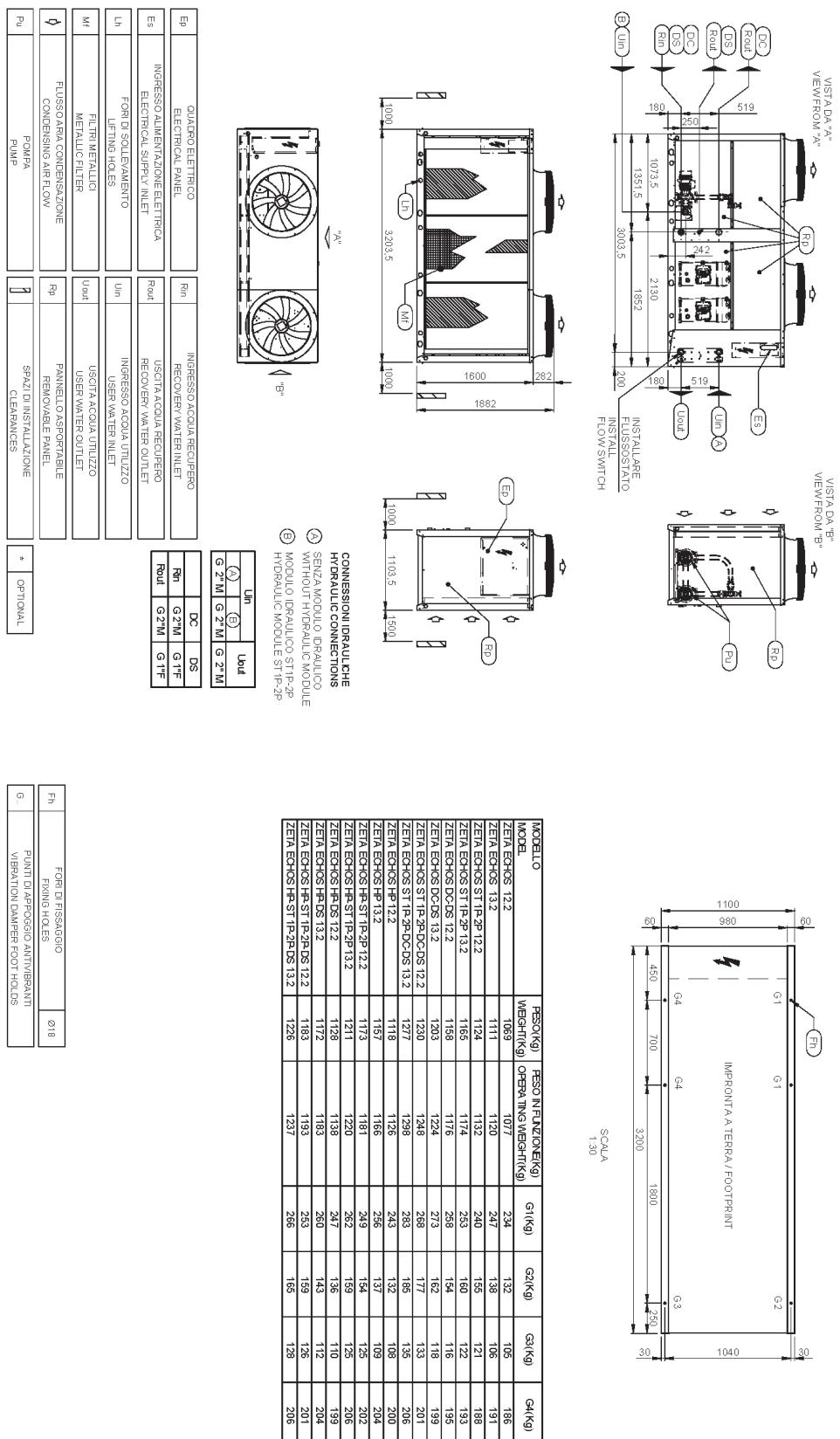
## DIMENSIONAL DRAWING

## OXFORD 8.2 - 10.2 2PS - OXFORD SLN 6 - 7.2 2PS

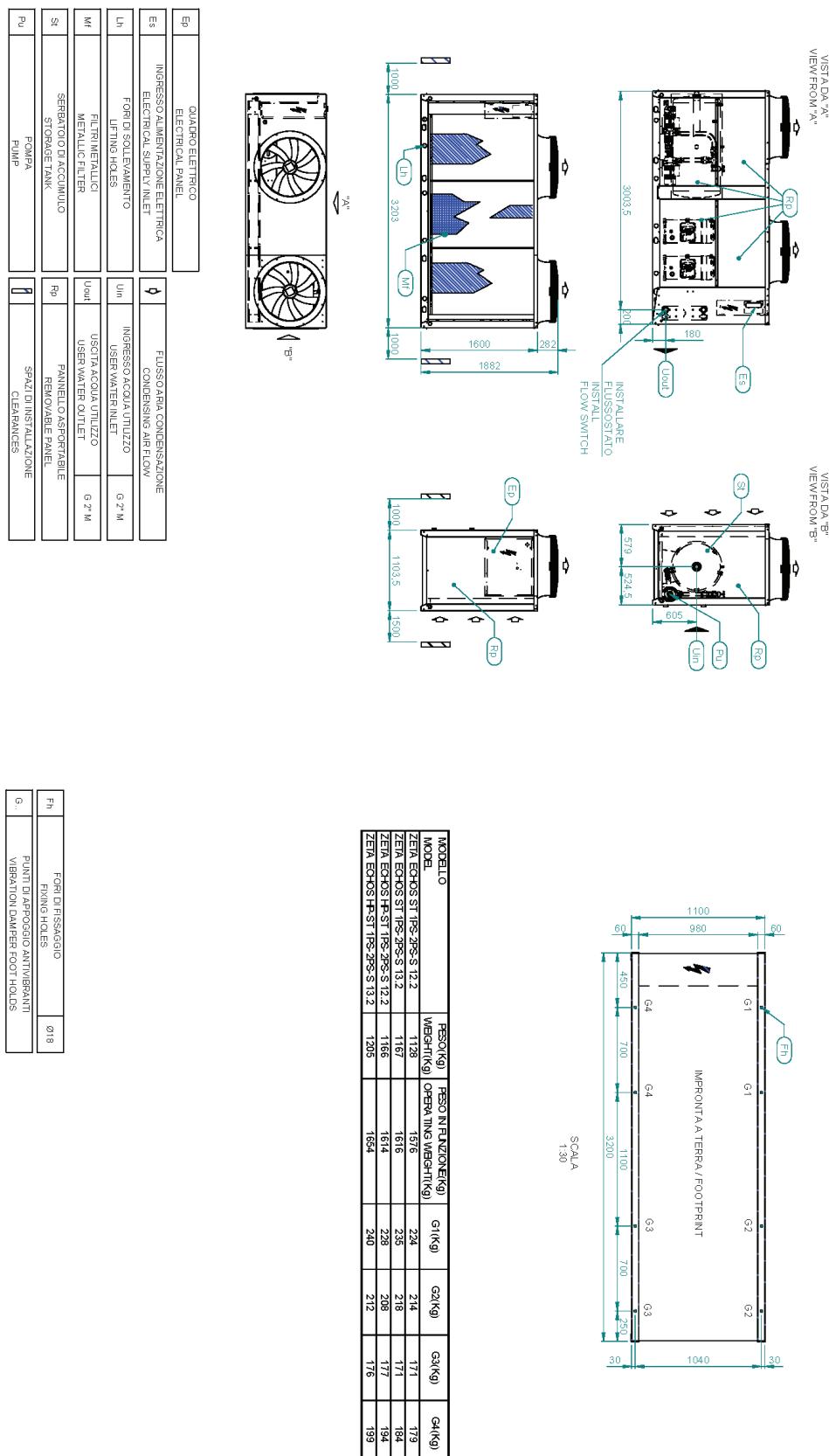


A47311E



**DIMENSIONAL DRAWING****OXFORD 12.2 - 13.2**

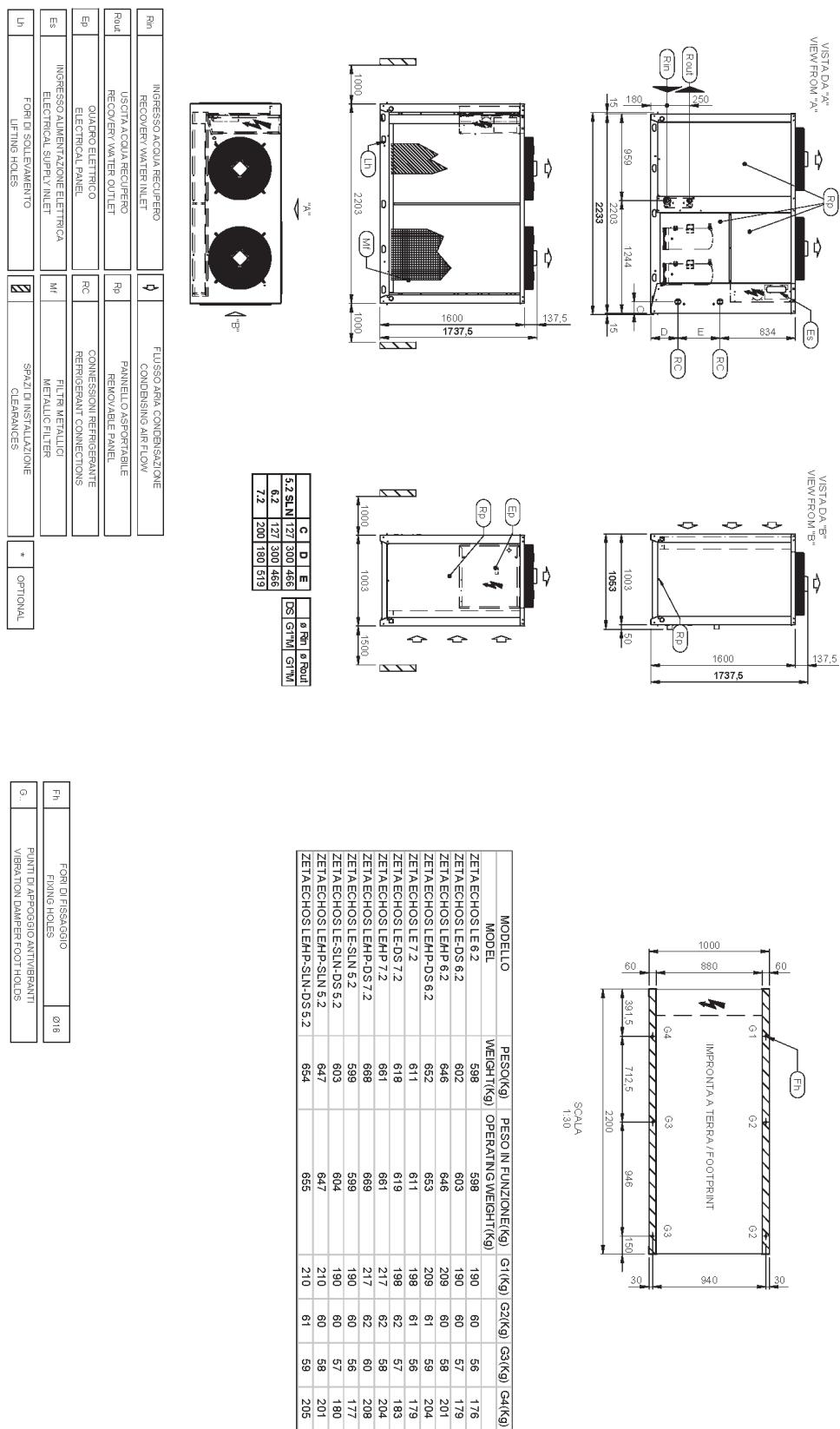
A48188E

**DIMENSIONAL DRAWING****OXFORD 1PS - 2PS 12.2 - 13.2**

A47312E

## DIMENSIONAL DRAWING

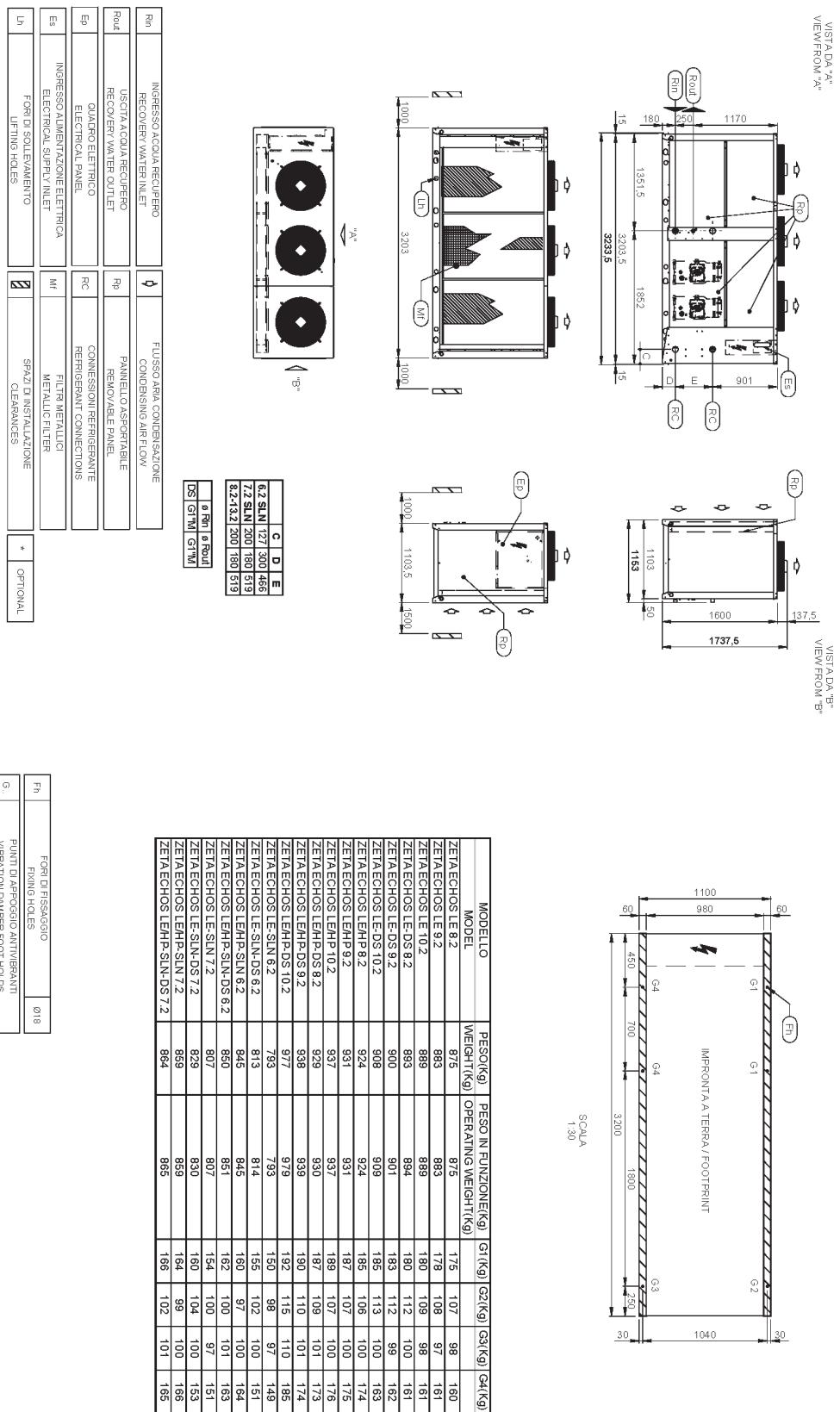
## OXFORD LE LE/HP 6.2 - 7.2 - 5.2 LE/HP SLN



A49275E

## DIMENSIONAL DRAWING

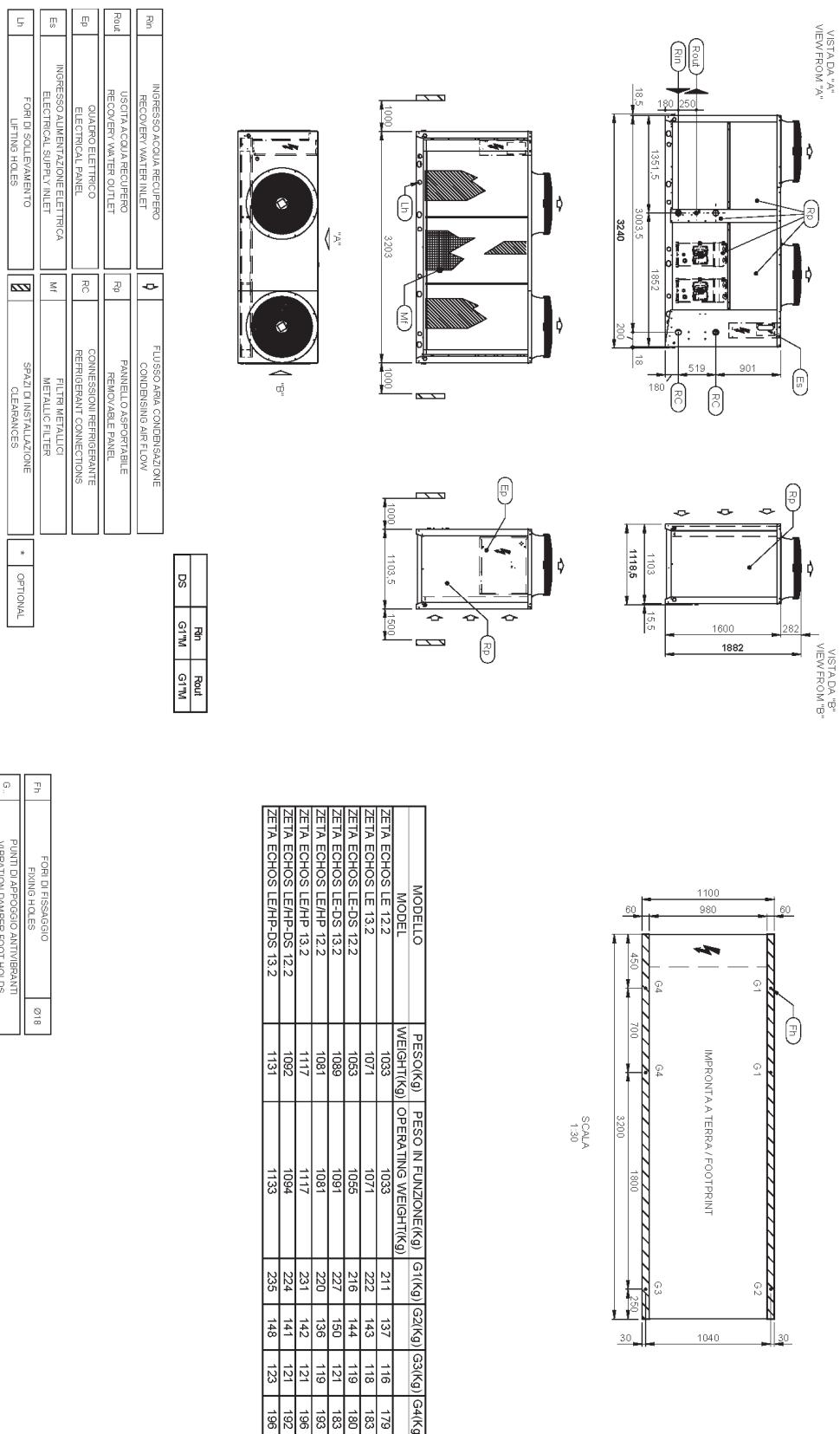
OXFORD LE 8.2 - 10.2 - 6.2 - 7.2 LE SLN



A49276E

## DIMENSIONAL DRAWING

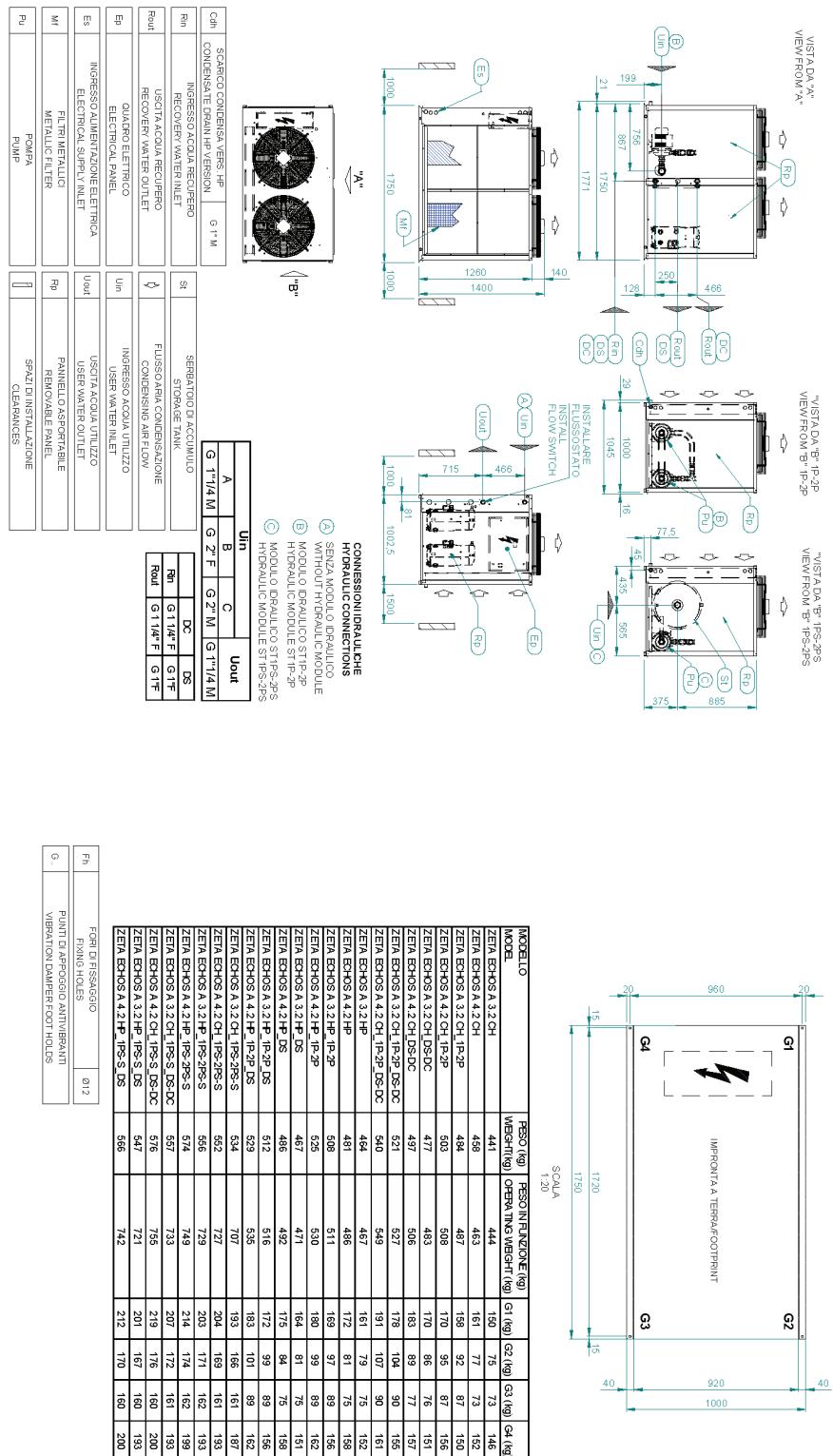
OXFORD LE 12.2 - 13.2



A49277E

## DIMENSIONAL DRAWING

## OXFORD A CH-HP 3.2-4.2

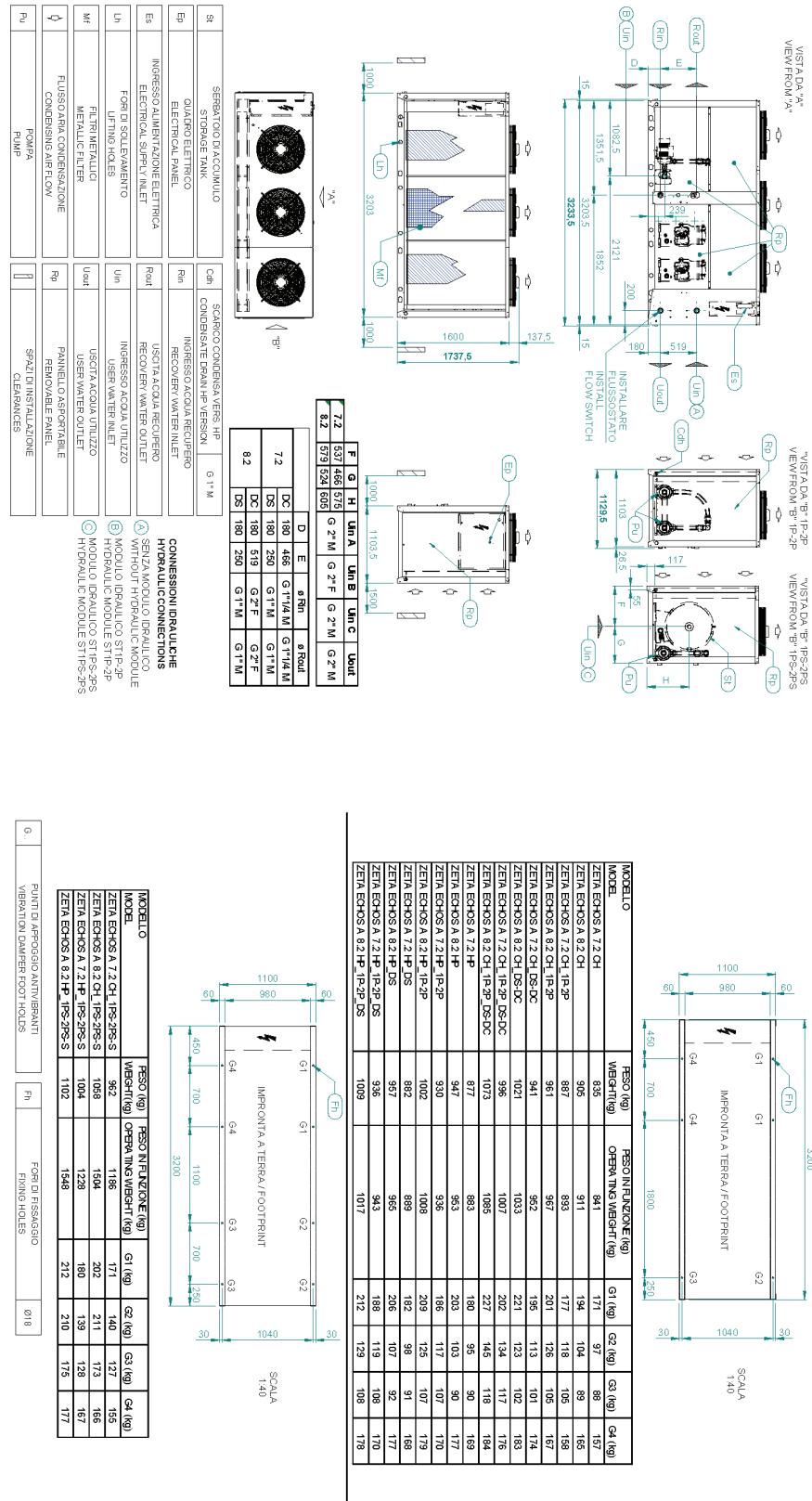


A4D076A



## DIMENSIONAL DRAWING

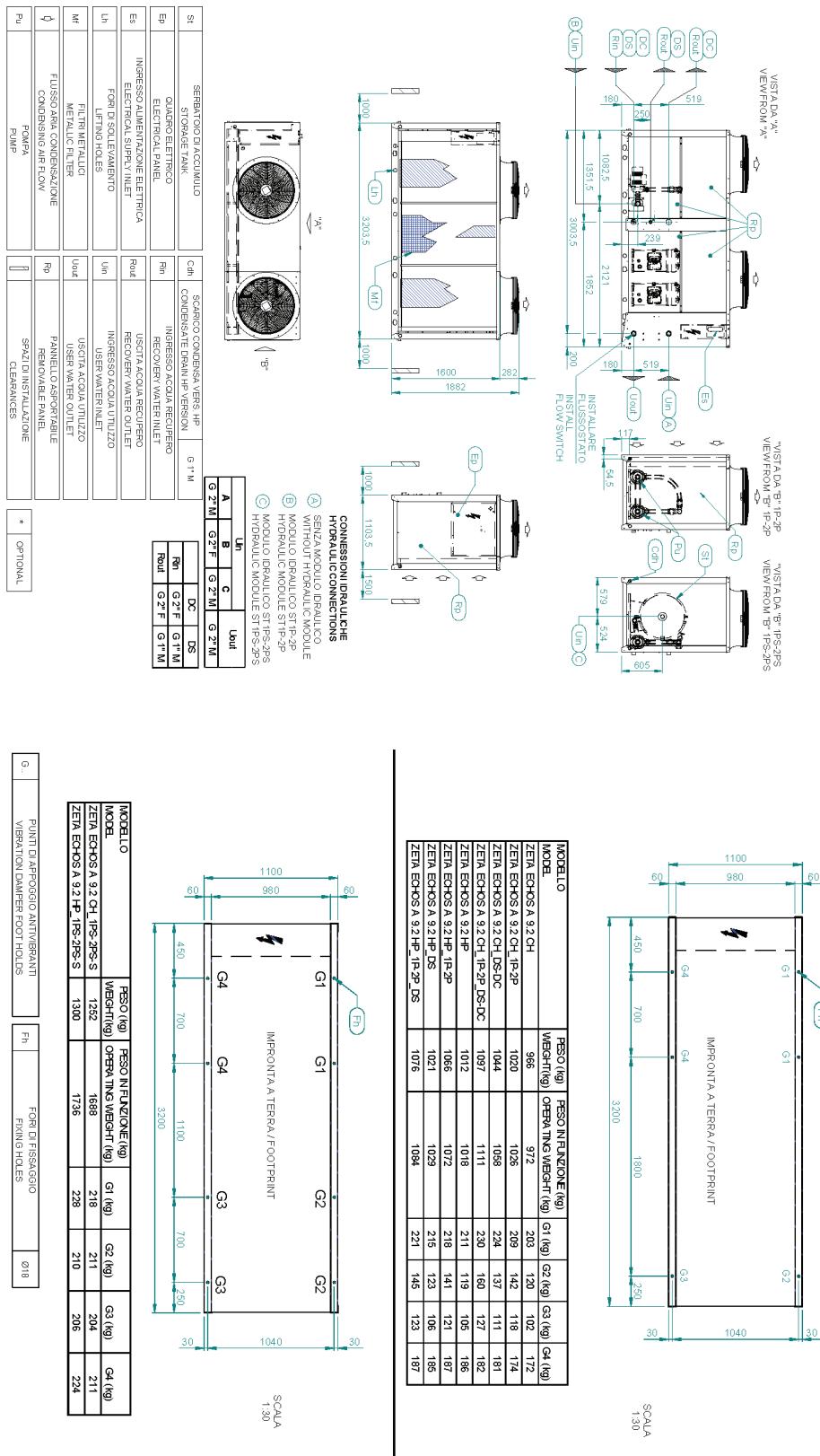
### OXFORD A CH-HP 7.2-8.2



A4D085A

## DIMENSIONAL DRAWING

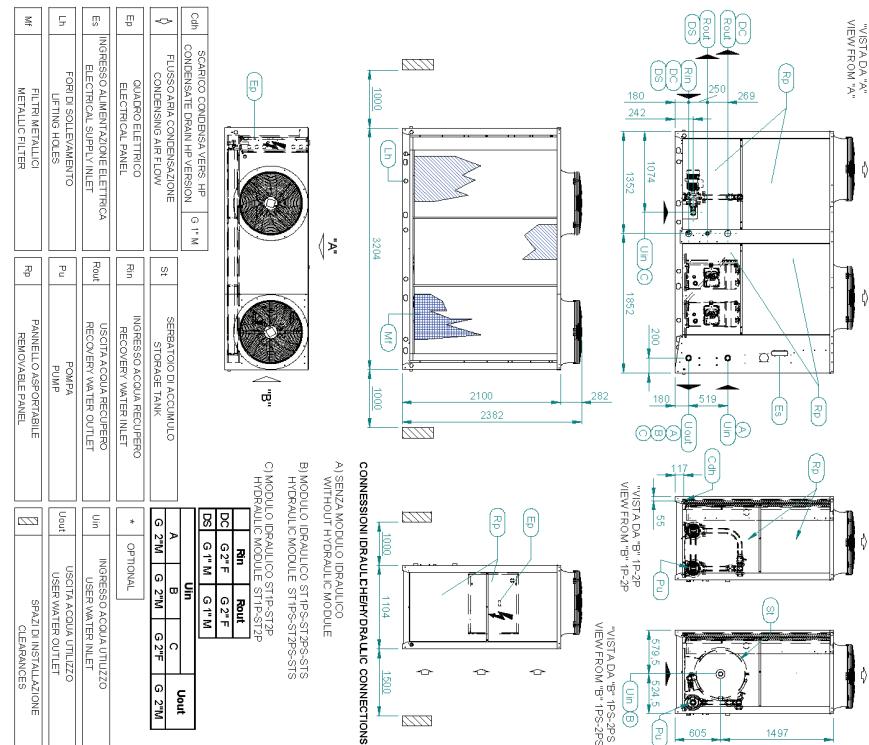
## OXFORD A CH-HP 9.2



A4D0088A

## DIMENSIONAL DRAWING

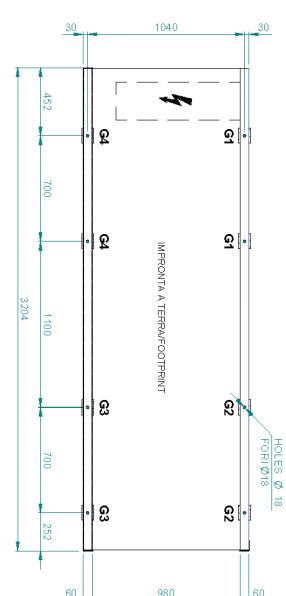
### OXFORD A CH-HP 10.2-12.2



| COD                              | SCARICO CONDIZIONATA VERSO HP<br>CONDENSATE DRAVO HP VERTOR<br>FLUSSO ARIA CONDENSAZIONE | TYPE<br>SERVATO O SI ACCUMULO<br>STORAGE TANK | WEIGHT (kg)<br>PESO (kg) | OPENING WEIGHT (kg)<br>PESO IN PENSIERI (kg) | G1 (kg)<br>G2 (kg) | G3 (kg)<br>G4 (kg) |
|----------------------------------|--|---|--------------------------|--|--------------------|--------------------|
| ZERA.ECHOS.A.10.2.CH             |  |   | 1145                     | 1152   | 712                | 71                 |
| ZERA.ECHOS.A.12.2.CH             |  |   | 1200                     | 1212   | 233                | 74                 |
| ZERA.ECHOS.A.10.2.CH.DS-DC       |  |   | 1192                     | 1208   | 226                | 82                 |
| ZERA.ECHOS.A.12.2.CH.DS-DC       |  |   | 1251                     | 1274   | 248                | 85                 |
| ZERA.ECHOS.A.10.2.CH.LP-2P       |  |   | 1221                     | 1228   | 218                | 90                 |
| ZERA.ECHOS.A.12.2.CH.LP-2P       |  |   | 1316                     | 1328   | 241                | 93                 |
| ZERA.ECHOS.A.10.2.CH.IP-2P.DS-DC |  |   | 1268                     | 1284   | 231                | 101                |
| ZERA.ECHOS.A.12.2.CH.IP-2P.DS-DC |  |   | 1365                     | 1388   | 256                | 115                |
| ZERA.ECHOS.10.2.HP               |  |   | 1185                     | 1192   | 216                | 75                 |
| ZERA.ECHOS.12.2.HP               |  |   | 1239                     | 1250   | 236                | 79                 |
| ZERA.ECHOS.10.2.HP.DS            |  |   | 1207                     | 1216   | 221                | 79                 |
| ZERA.ECHOS.12.2.HP.DS            |  |   | 1256                     | 1270   | 241                | 81                 |
| ZERA.ECHOS.10.2.HP.IP-2P         |  |   | 1261                     | 1268   | 222                | 94                 |
| ZERA.ECHOS.12.2.HP.IP-2P         |  |   | 1350                     | 1362   | 245                | 106                |
| ZERA.ECHOS.10.2.HP.IP-2P.DS      |  |   | 1281                     | 1290   | 227                | 97                 |
| ZERA.ECHOS.12.2.HP.IP-2P.DS      |  |   | 1370                     | 1384   | 249                | 110                |
| ZERA.ECHOS.A.10.2.CH.IPS-2P-S    | *  |   | 1319                     | 1330   | 236                | 102                |
| ZERA.ECHOS.A.12.2.CH.IPS-2P-S    | *  |   | 1416                     | 1756   | 230                | 209                |
| ZERA.ECHOS.A.10.2.HP.IPS-2P-S    |  |   | 1363                     | 1800   | 235                | 214                |
| ZERA.ECHOS.A.12.2.HP.IPS-2P-S    |  |   | 1452                     | 1694   | 255                | 228                |

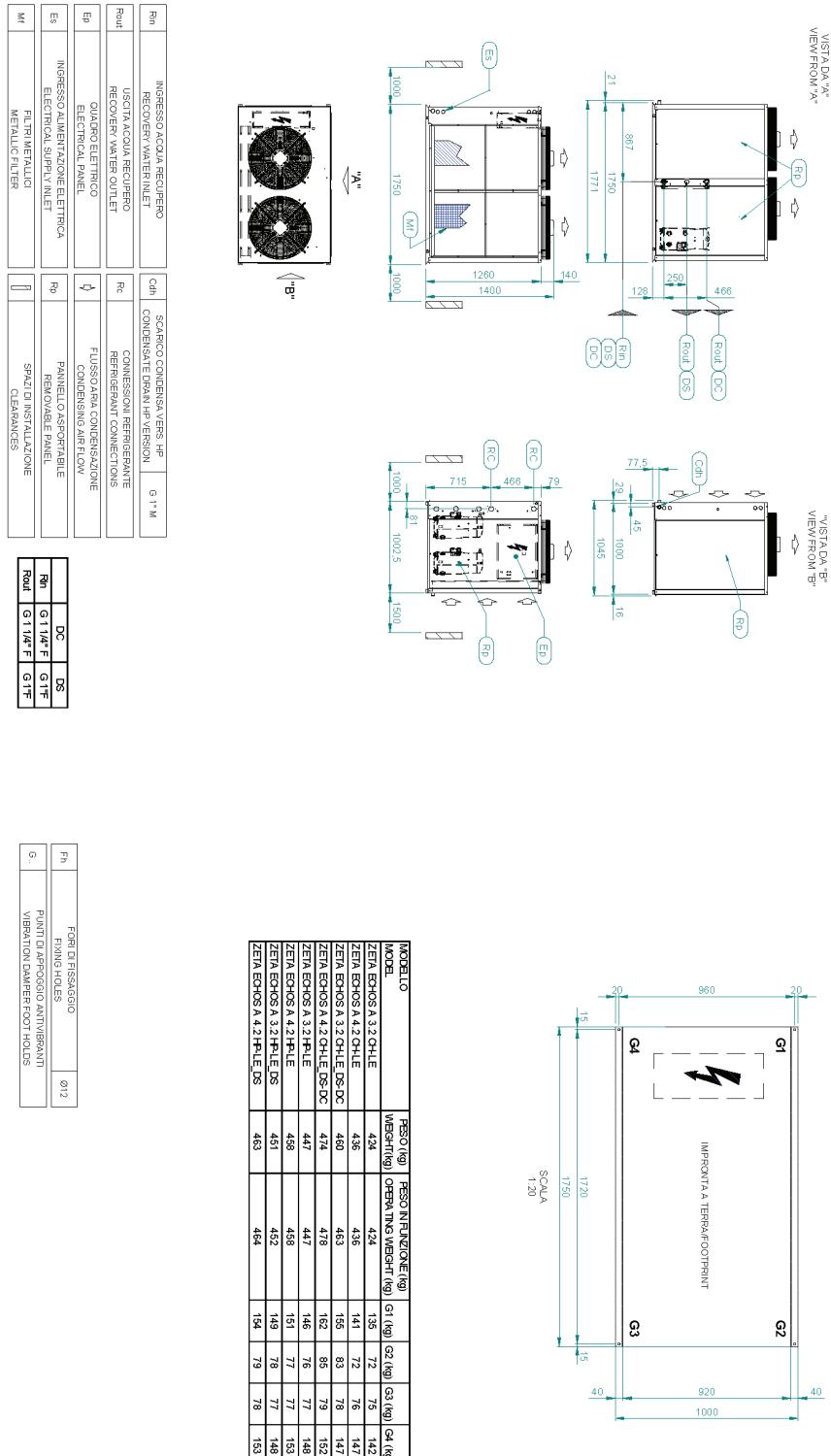
G = RUOLO DI APPOGGIO ANTI VIBRANTE  
W = VENTILATION DAMPFER FOOT HOLES

Fh = FORI DI FISSAGGIO  
018 = SPALLI DI INSTALLAZIONE

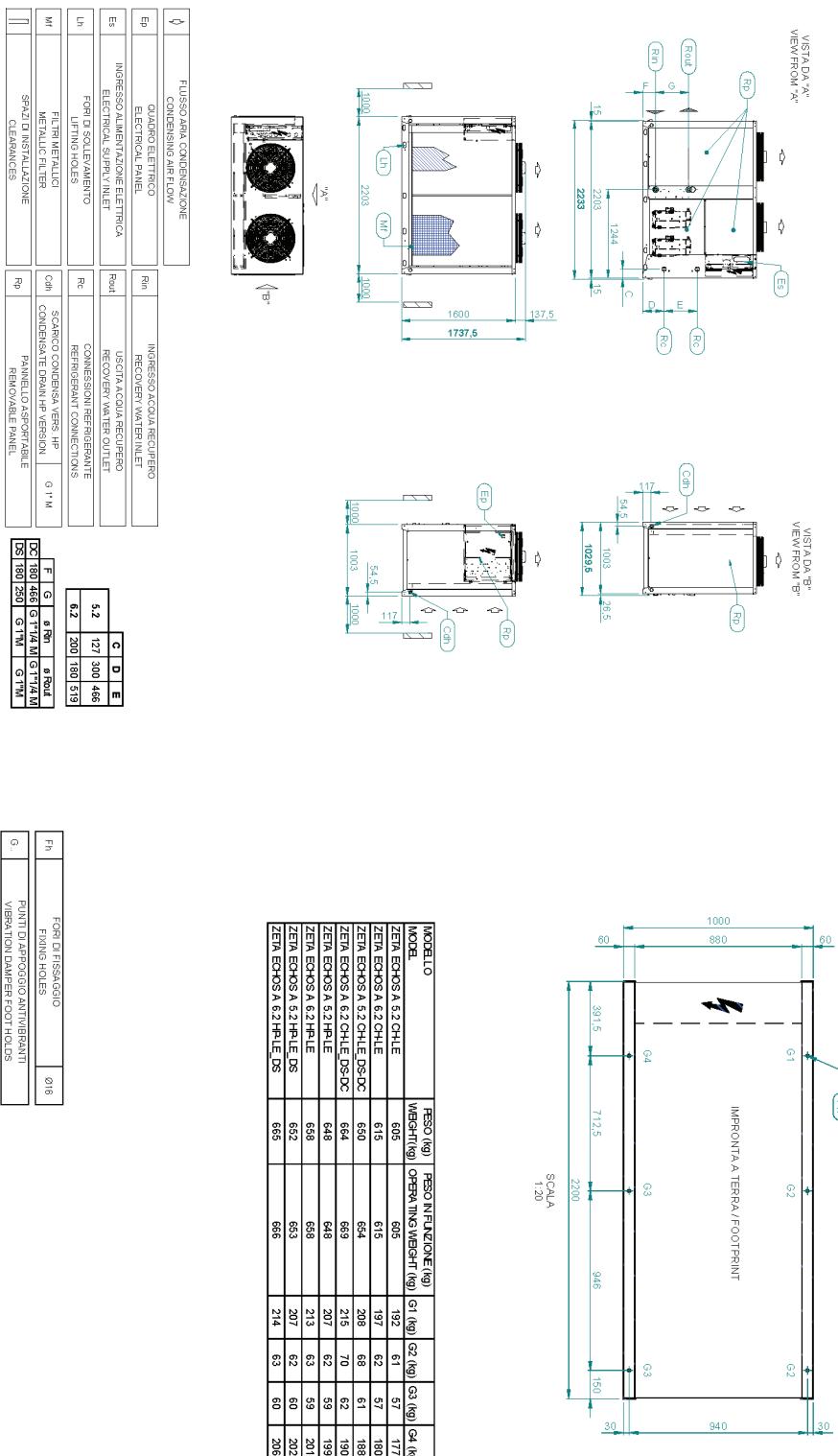


## DIMENSIONAL DRAWING

OXFORD A CH-HP /LE 3.2-4.2

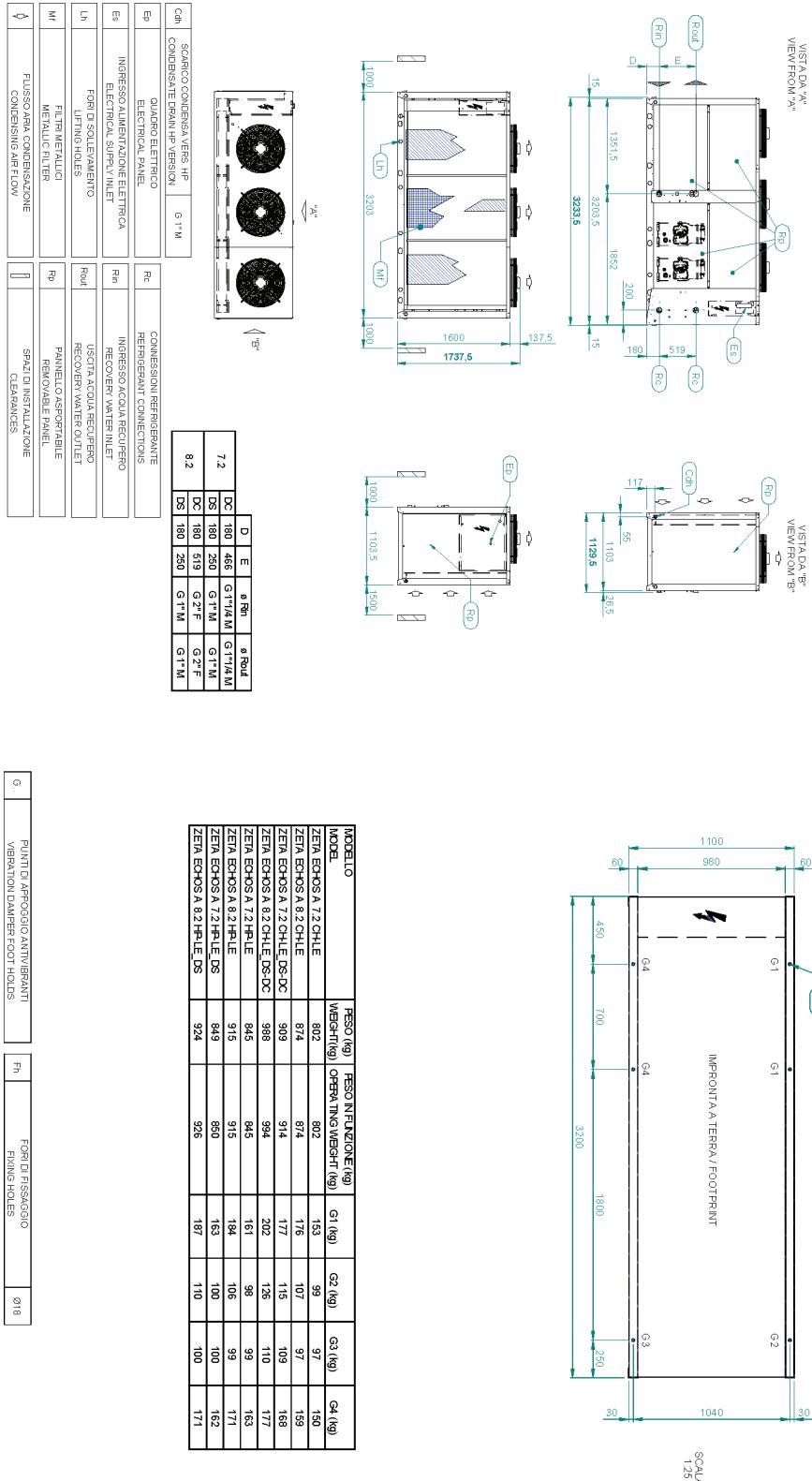


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**DIMENSIONAL DRAWING****OXFORD A CH-HP /LE 5.2-6.2**

## DIMENSIONAL DRAWING

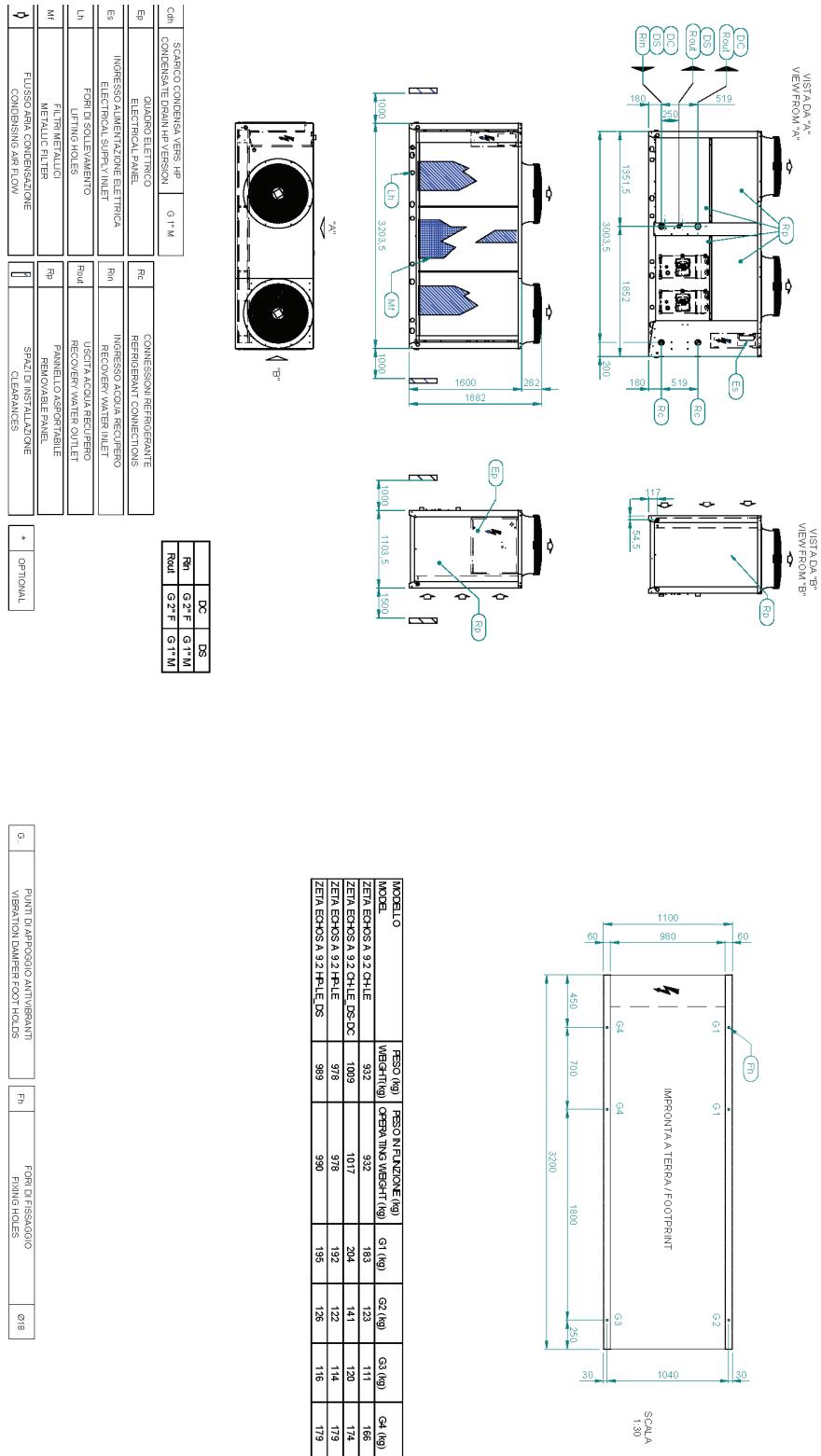
OXFORD A CH-HP /LE 7.2-8.2



A4D129A

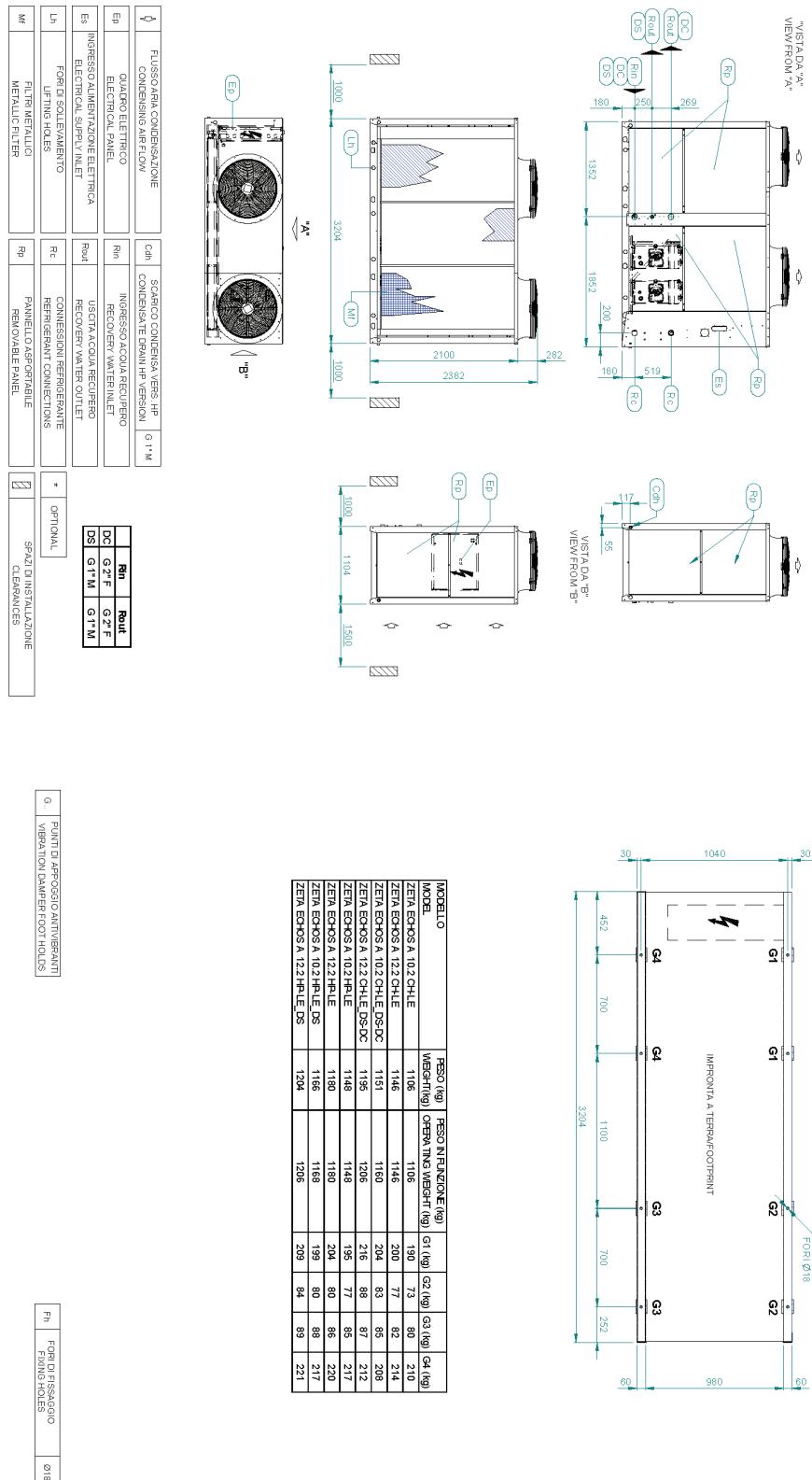
## DIMENSIONAL DRAWING

## OXFORD A CH-HP /LE 9.2



## DIMENSIONAL DRAWING

## OXFORD A CH-HP /LE 10.2-12.2



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## INSTALLATIONS RECOMMENDATIONS

### LOCATION

Strictly allow clearances as indicated in the catalogue.

Please check that there isn't any obstructions on the suction of the finned coil and on the discharge of the fans

Locate the unit in order to be compatible with environmental requirements (sound level, integration into the site, etc.).

### ELECTRICAL CONNECTIONS

Check the wiring diagram enclosed with the unit, in which are always present all the instructions necessary to the electrical connections.

Supply the unit at least 12 hours before start-up, in order to turn crankcase heaters on. Do not disconnect electrical supply during temporary stop periods (i.e. weekends).

Before opening the main switch, stop the unit by acting on the suitable running switches or, if lacking, on the remote control.

Before servicing the inner components, disconnect electrical supply by opening the main switch.

The electric supply line must be equipped with an automatic circuit breaker (to be provided by the installer).

### HYDRAULIC CONNECTIONS

Carefully vent the system, with pump turned off, by acting on the vent valves. This procedure is fundamental: little air bubbles can freeze the evaporator causing the general failure of the system.

Drain the system during seasonal stops (wintertime) or use proper mixtures with low freezing point. In case of temporary stop periods an electric heater should be installed on the evaporator and hydraulic circuit.

Install the hydraulic circuit including all the components indicated in the recommended hydraulic circuit diagrams (expansion vessel, flow switch, strainer, storage tank, vent valves, shut off valves, flexible connections, etc.).

Connect the flow switch, which is furnished on all units, not fitted. Follow the instructions enclosed with the units.

### START UP AND MAINTENANCE OPERATIONS

Strictly follow what reported in use and maintenance manual. All these operations must be carried on by trained personnel only.



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**Swegon**