

## TECHNICAL DATA SELECTION

PROJECT N.: ..  
 DATE: 04-09-2023  
 PROJECT NAME:



LCX CS

[#1] LCX364CSGO

## Input data

Requested model LCX364CSGO

## Cooling

User Water Temperature In	°C	12 - 0
User Water Temperature Out	°C	7 - 0
User Glycol	%	30
Source Air Temperature	°C	35 - 0
Source Relative humidity	%	40
Load Percentage	%	100

## Glycol Type Selection

Glycol Type Ethylenic

## Sound Inputs

Distance in free field	m	10
Direction factor	m	2

## Altitude Inputs

Altitude above sea level m 0 - 0

## UNI EN 14511 Inputs

Enable calculations with UNI EN 14511 Yes

UNI EN 14511 Version UNI EN 14511 - 2018

User Pumps -

## TECHNICAL DATA SELECTION

PROJECT N.: ..

DATE: 04-09-2023

SW: #

DB: #

PROJECT NAME:

## Output data

Requested model

LCX364CSGO

Cooling		
Data Inputs		USR W 12,0°C 7,0°C 30% SRC A 35,0°C 40%
Cooling capacity	kW	350,4
Cooling capacity [UNI EN 14511]	kW	350,0
Water Flow user side	l/h	66711
Water Pressure drops user side	kPa	60
Compressor power input	kW	128,9
Compressor absorbed current	A	206,7
Total Power input	kW	136,4
Total Power input [UNI EN 14511]	kW	138,1
Total Absorbed Current	A	223,4
EER		2,57
EER [UNI EN 14511]		2,53
ESEER		3,54
SEER		4,15
Eta s (Seasonal Cooling Efficiency)		163,00
LP Pumps (option) User side - Available pressure head	kPa	117
LP Pumps (option) User side - Maximum Absorbed Current (FLA)	A	7,0
HP Pumps (option) User side - Available pressure head	kPa	241
HP Pumps (option) User side - Maximum Absorbed Current (FLA)	A	13,1
LP Pumps [AND logic] (option) User side - Available pressure head	kPa	137
LP Pumps [AND logic] (option) User side - Maximum Absorbed Current (FLA)	A	4,6
HP Pumps [AND logic] (option) User side - Available pressure head	kPa	172
HP Pumps [AND logic] (option) User side - Maximum Absorbed Current (FLA)	A	5,6
Common Data		
Maximum absorbed current (FLA) [without options]	A	300,0
Start up current (LRA) [without options]	A	497,0
Start up current with Soft Starter kit [without options]	A	440,0
Sound power level Lw (base unit) [without options]	dB(A)	90
Sound pressure level Lp (base unit) [without options]	dB(A)	62
Source Air Volumetric Flow	m <sup>3</sup> /h	96515
Source Fans Number		8
Source Fans Power Input	kW	0,9
Source Fans Absorbed Current	A	2,1
Compressors/Circuits		4/2
Buffer tank volume (option)	l	765
Power Supply		400 / 3+N / 50
Refrigerant		R410A



GWP		2088
Weight without options	kg	1947
<b>Version</b>		
Software version		SELMAC 0.1.18
Database version		20221108-1

**Remarks:**

The declared performances are the result of thermodynamic simulations and therefore affected by tolerances.

The certified performances, conditions and the certification of the software have to be verified in

[www.eurovent-certification.com](http://www.eurovent-certification.com)

## TENDER SPECIFICATIONS

PROJECT N.: ..  
 DATE: 04-09-2023  
 PROJECT NAME:



## LCX CS

[#1] LCX364CSG0 0B5S0CE100G0V 0B0D00GHI00000

Self-contained air condensed water chiller for outdoor installation, comprised mainly of:

## STRUCTURE

Galvanised steel sheet base with a textured polyester powder coating for outdoors, colour RAL7031.

Structure built from steel sheet, with a textured polyester powder coating for outdoors (colour RAL9002) to ensure effective resistance to corrosive agents. The fastening systems are made of non-oxidising carbon steel materials that have undergone surface passivation treatments.

The equipment compartment is accessible on 3 sides thanks to easy-to-remove panels that greatly simplify maintenance and/or inspection.

## ACOUSTIC VERSIONS

Available with different acoustic setups:

- Standard
- Low-noise
- Super low-noise (on request)

The insulation from vibrations can be achieved using rubber or spring vibration dampers (available as an optional).

## COMPRESSORS

Scroll type and designed to work with R410A, in tandem configuration, can be sound insulated, connected in parallel on the same circuit, complete with internal thermal protection of the windings, and installed on vibration-damping mounts. Single-circuit units with 2 compressors or dual-circuit units with 2 compressors for each circuit are available. The tandem solutions offer high efficiency at partial loads.

## PLATE HEAT EXCHANGER

Brazed corrugated plate heat exchanger made of stainless steel and optimised for use with R410A.

## FINNED BLOCK HEAT EXCHANGER

Made of 8 mm diameter grooved copper pipes with aluminium fins, generously sized. The use of finned block heat exchangers with 8 mm diameter pipes reduces pressure drops on the air side, thus significantly improving the noise levels of the units. The grooved pipes provide better condenser performance. The finned block condensers can be fitted with a protective outer grille.

## FAN DRIVE ASSEMBLY

Electric fan with 6-pole external motor rotor directly keyed to the axial fan, with internal thermal protection on the windings, complete with safety grille and dedicated supporting structure. The unique aerodynamic profile of the blades (HyBlade) results in outstanding aerodynamic and acoustic performance.

The fan is housed in a special compartment having a profile designed to optimise ventilation.

The condensation control system continuously and automatically regulates the fan speed, further limiting the noise emissions of the unit during night-time operation and under partial load conditions.

Electric fans with BLDC motor are available on request.

## COOLING CIRCUIT

The cooling circuit is built using only components of the finest quality brands produced by qualified manufacturers according to the specifications of Directive 97/23 for brazing. Strict design and quality control standards are applied during all phases of construction of the internal piping.

- Version with 2 cooling circuits, each with 2 compressors in tandem

The main components of the cooling circuit are:

- Brazed plate heat exchanger made of AISI 316 stainless steel and optimised for use with R410A.
- Finned block condenser with 8 mm copper piping and aluminium fins, characterised by ample heat exchange surfaces.
- Dehydrating filter.
- Flow indicator with humidity indicator.
- Electronically controlled electric expansion valve including software designed and optimised so as to follow the



cooling load under all conditions of use.

- High and low pressure switches.
- Safety valve.
- Schrader valves for checks and/or maintenance.
- Refrigerant pressure gauges (optional).

Optionally, partial recovery of the condensation heat (25%) can be obtained by means of suitably sized plate exchangers.

#### WATER CIRCUIT

As standard, all units have lead-out plumbing connections with Victaulic connectors (couplings and stub pipe with weld-on connection to the plant available as an option) situated on the rear of the unit, suitably positioned air vent valves, safety valve, paddle flow switch and outlet water temperature probe with antifreeze thermostat function. Available on request there are numerous pump systems that can be incorporated within the chiller unit without changing its overall dimensions:

- single standard or high delivery head pump
- standard or high head pump and associated back-up pump
- standard or high head single pump with inverter controlled flow modulation
- standard or high head pump and relative back-up pump with inverter controlled flow modulation

Each hydronic kit includes a membrane expansion tank.

The pump system is incorporated in the structure of the unit and is arranged so as to ensure that the pump motors are always cooled by outside air.

In the case of pump systems including a back-up pump, the microprocessor controls the pumps in such a way as to equally divide the hours of operation, changing over the pumps in the event of a fault.

In addition to the pump kit, a water buffer tank can be installed inside the fan compartment, on the outlet side of water circuit, in order to attenuate the inevitable temperature fluctuations caused by the ON/OFF switching of the compressors.

The available optionals include a water circuit antifreeze kit, which can be configured according to the hydronic solutions chosen, and uses self-regulating PTC heating elements interlocked with compressor operation and the set-point value.

#### ELECTRIC CONTROL BOARD

Electric control board with a door interlock isolating switch and watertight panels providing quick access to the control keys, built in conformity with standard EN 60204, wired in accordance with directive EEC 73/23, directive EEC 89/336 on electromagnetic compatibility and related standards.

The unit can be set up for:

- 400V/3N/50Hz power supply
- 400V/3N/50Hz power supply with thermal magnetic circuit breakers for protection against overcurrents or surges in the mains supply voltage
- 400V/3/50Hz power supply with transformer for auxiliaries
- 400V/3/50Hz power supply with transformer for auxiliaries and thermal magnetic circuit breakers for protection against overcurrents or surges in the mains supply voltage

The cables inside the electric compartment are numbered.

#### ELECTRONIC MICROPROCESSOR CONTROLLER

The electronic control enables the complete control of the unit. It can be easily accessed through a polycarbonate flap with IP65 protection rating.

By reading the outdoor air temperature, it can automatically change the setpoint to adapt it to the outdoor load conditions or keep the unit running even in the harshest winter conditions.

The advanced controller fitted as standard comes complete with MODBUS protocol and allows immediate connection to the GARDA monitoring system through the RS485 serial port (selectable option).

The main functions are control of water temperature at the evaporator inlet, complete alarm management, dynamic setpoint adjustment according to air temperature, and the ability to connect an external terminal that replicates the machine's on-board control functions.

With the advanced microprocessor control it is possible to set up LAN networks for controlling a maximum of 4 units in parallel.

Remote communication options via RS485 serial card (Carel or Modbus protocol), Lonworks, with GSM modem kit or PicoWeb Ethernet card. Supervisor software supplied on request.

Complete with:

- Standard version
- 400V - 3N - 50Hz power supply
- Advanced onboard controller (display LCD 8x22) and electronic expansion valve
- Double pump run and stand by and expansion vessel
- Water tank user side
- Condensation control by phase-cut fans
- Antifreeze kit for the evaporator
- RS485 serial board (Carel / Modbus protocol)
- Outdoor finned coil heat exchanger with copper pipes and aluminium fins
- Rubber anti vibration shock mounts
- Pair of quick couplings for water IN-OUT
- Soft starter
- Clock card
- Configurable digital alarm card
- Set-point compensation outdoor temperature probe
- Refrigerant pressure gauges



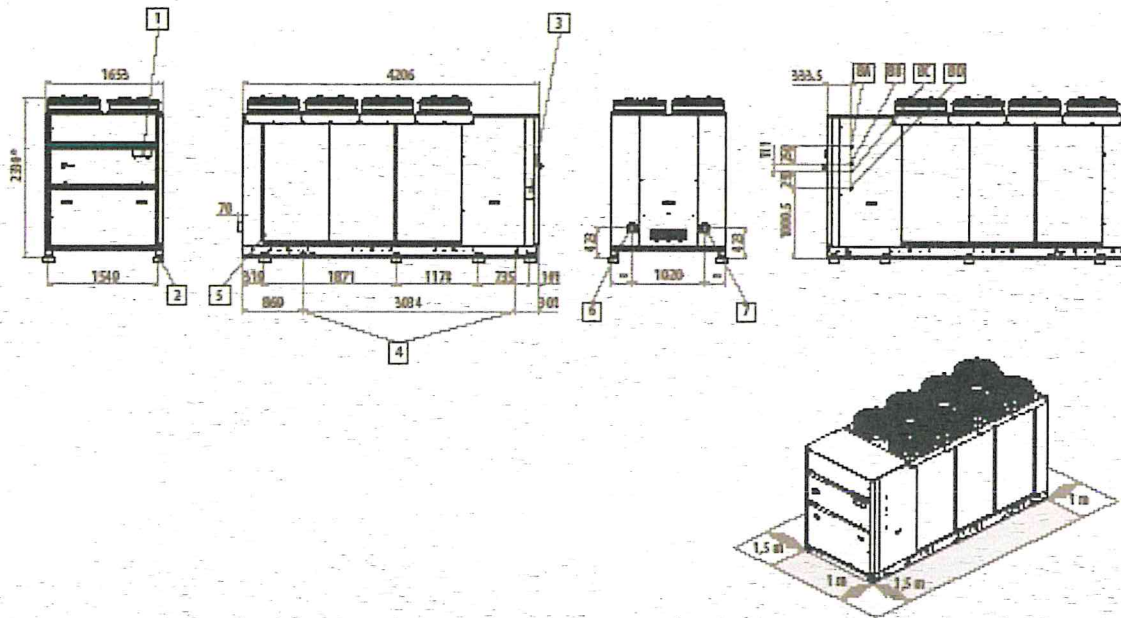
**DIMENSIONAL DRAWING**

PROJECT N. : ..  
 DATE : 04-09-2023  
 PROJECT NAME :

LCX CS  
Rif: [#1]

[F6]

rev. 1



**LEGEND**

1	User interface
2	Vibration dampers
3	Power supply input
4	Lifting points (optional)
5	Protection grill (optional)
6	Water inlet Victaulic $\varnothing$ 4"
7	Water Outlet Victaulic $\varnothing$ 4"
8A	Heat recovery water outlet $\varnothing$ 1", left-hand circuit
8B	Heat recovery water inlet $\varnothing$ 1", left-hand circuit
8C	Heat recovery water outlet $\varnothing$ 1", right-hand circuit
8D	Heat recovery water inlet $\varnothing$ 1", right-hand circuit
*	With EC fans 2367 mm