



Air cooled chillers

POWERCIAT LX R407C

Screw compressors
 CIAT *direct expansion*
 shell and tubes evaporator
 Hydraulic pack versions
 "Plug and Cool"
 H.P.S. equipment (High Power System)



Cooling capacity : 230 to 1100 kW



Cooling



Hydraulic module



Heat recovery



USE

The new generation of **POWERCIAT LX water chillers** offers an optimal solution to all the refrigeration applications encountered in the air conditioning or industrial process.

This range is designed with the latest generation of components : accessible hermetic twin screw compressors, modulating capacity control, communicating control and management by Xtra Connect microprocessor, components optimized for the ecological refrigerant HFC 407C.

This range is also proposed with an integrated hydraulic module : **POWERCIAT LXH**. This one includes all the elements required for a right operation of the unit : buffer tank, expansion vessel, single or twin pump, air vent , pressure relief valves , shut off valves , manometers...

A range with compact hydraulic equipment (without buffer tank) is also available : **POWERCIAT LXC**.

Units in accordance with EN 60-204 - EN 378-2 regulations and directives :

- Machines (98/37 CEE) modified
- CEM (89/336 CEE) modified 92/31 CEE - 93/68 CEE
- Low voltage (73/23 CEE) modified 92/31 CEE - 93/68 CEE
- DESP 97/23 CEE

→ **LX - LXH - LXC**

- group 2 sizes 1200Z (HPS) to 1850Z (HPS)
- group 3 sizes 2150Z (HPS) to 2800Z (HPS)
- group 4 sizes 3050Z HPS to 4200Z HPS

RANGE

POWERCIAT LX - LXH - LXC

2 compressors, 2 refrigerant circuits :

12 models : 1200Z, 1200Z HPS, 1500Z, 1500Z HPS, 1850Z, 1850Z HPS, 2150Z, 2150Z HPS, 2500Z, 2500Z HPS, 2800Z, 2800Z HPS

3 compressors, 3 refrigerant circuits

4 models : 3050Z HPS, 3400Z HPS, 3750Z HPS, 4200Z HPS

■ CONFIGURATION

- a - **HIGH PERFORMANCE** version
Ventilation 905 rpm
- b - **LOW NOISE** version (LN)
Ventilation 715 rpm + compressors sound insulation
- c - **XTRA LOW NOISE** version (XLN)
Specific mounting for 715 rpm fans + compressors sound insulation



DESCRIPTION

POWERCIAT LX serie

■ Compressors

- Accessible hermetic twin screw type
- Optimized profile of rotors ensuring a high efficiency
- Electrical motor incorporated with **part-winding starting**
- Motor integral electronic protection
- Control of the phases balance and rotation direction
- Integrated overpressure valve
- Discharge temperature control
- Lubrication under controlled pressure
- 3-stage integrated oil separator
- Crankcase heater
- Suction filter
- Discharge valve
- Slide for modulating capacity control
- Compressors fitted on anti-vibration mounts

■ Evaporator

- Direct expansion shell and tube type
- High performance copper tubes bundle
- Steel shell
- Corrosion resistant baffles
- Thermal insulation by cellular foam with UV resistant polyurethane film

■ Air cooled condenser

- Copper tubes coils, aluminium fins
- Direct drive propeller fans
- Rotation speed : **905 or 715 rpm**
- 3 phase electrical motors, IP 54
- Standardized protection grilles

■ HPS (High Power system) on models LX/LXH/LXC...HPS



■ The HPS system allows to increase cooling capacity, improves the performance coefficients (EER) of your installation, particularly in part load, and ensures therefore an optimal operation of POWERCIAT during all the year.

■ Refrigerant accessories

- Filter dryers with rechargeable cartridges
- Liquid sight glasses
- Solenoid valves on liquid refrigerant lines
- Thermostatic expansion valves

■ Safety and regulation devices

- HP/LP pressure sensors
- Low and high pressure safety valves
- Chilled water control sensor (inlet and outlet)
- External temperature sensor

- Evaporator antifreeze sensor
- Compressors discharge sensor
- Evaporator water flow switch

■ Electrical panel

- IP 44
- Electrical supply 400 V - 3 ph. - 50 Hz + earth (-5% / +4%)
- Wires numbering and electrical components referencing
- Main fuse disconnect safety switch with external handle
- Transformer for control circuit
- Compressors motors contactors
- Fans motors contactors
- Fuse-protected compressor motors
- Fans motors protection
- Main electrical ground
- Phase monitor (reversal, loss, over and under voltage)

■ Electronic control with microprocessor Xtra connect

ensuring the following main functions :

- 2 remote switchable set points
- Chilled water temperature control
- Possibility of water temperature variation as a function of the outside temperature (water law)
- Low temperature energy storage control
- Condensing pressure control
- Compressors discharge temperature control
- Compressors anti-short cycle control
- Control and optimisation of operating parameters
- Counting and balancing of compressors, pumps operating times
- Automaticity control
- LCD display panel, 2 lines of 20 characters allowing :
 - parametering of the unit
 - direct reading of all information : settings, water inlet/outlet temperatures, outside temperature, HP/LP pressures, unit operating status...
 - Faults control with memorization of the last 9 faults and operating logbook when those faults occur
 - Weekly management of the unit
 - Unit general fault display on terminals
 - Automaticity control on terminals
 - RS 485 output for bus connection with centralized Building Management System.

■ Capacity control

- Modulating capacity control :
 - from 25 to 100 % (sizes 1200Z (HPS) to 2800Z (HPS))
 - from 17 to 100 % (sizes 3050Z HPS to 4200Z HPS)

■ Frame and casing

- Frame in RAL 7035 and 7024 painted metal sheet
- Casing in RAL 7035 and 7024 lacquered metal sheet



Air cooled chillers

POWERCAT LXH serie

The design of **POWERCAT LXH units** is identical to the one of POWERCAT LX

These units integrate the **complete hydraulic** equipment for standard installation :

- 1 insulated buffer tank , capacity : 950 litres
- 1 monocellular centrifugal hydraulic pump (**single** or **twin** pump)
- 1 expansion vessel (80 litres)
- 1 automatic air vent
- 1 manual air vent
- 1 safety valve calibrated at 4 bars
- A drain hole
- 2 shut off valves for the pump
- 1 set of manometers
- Contactors, protection devices and control for pumps inside the unit electrical panel.

POWERCAT LXC serie

The design of **POWERCAT LXC units** is identical to the one of POWERCAT LX

These units integrate the **a compact hydraulic equipment**

- 1 monocellular centrifugal hydraulic pump (single or twin pump)
- 1 expansion vessel (80 litres)
- 1 automatic air vent
- 1 manual air vent
- 1 safety valve calibrated at 4 bars
- A drain hole
- 2 shut off valves for the pump
- 1 set of manometers
- Contactors, protection devices and control for pumps inside the unit electrical panel.

OPTIONS

- **LOW NOISE (LN)** version : ABS phonic insulation casing with sound proof material + 715 rpm fans
- **XTRA LOW NOISE (XLN)** version : ABS sound insulation casing with soundproof material + specific mounting for 715 rpm fans
- Compressors suction valves
- Evaporator antifreeze protection (LX serie)
- Evaporator antifreeze protection + piping + hydraulic equipment (LXH - LXC series)
- Condenser coil treatment :
 - polyurethane coated fins
 - polual blygold coating
- Anti-vibration mounts
- Evaporator flexible connections
- Remote control box
- Voltage free relay card
- Heat recovery with brazed plates desuperheaters (1 per refrigerant circuit)
- Low temperature glycol water
- Electronic expansion valve
- Soft start
- Management of several units MULTICONNECT
- Optimised high pressure
- Fans speed variator
- LonWorks gateway
- Container handling equipment
- Shackles



POWERCAT LX serie



TECHNICAL CHARACTERISTICS

POWERCAT LX - LXH - LXC			1200Z	1200Z HPS	1500Z	1500Z HPS	1850Z	1850Z HPS	2150Z	2150Z HPS
High performance version	Cooling capacity (1)	kW	236	261	305	338	362	409	429	486
	Absorbed power (2)	kW	101	110	129	140	156	172	184	202
	EER/ESEER		2.31/2.92	2.37/2.92	2.35/2.94	2.41/2.96	2.32/2.91	2.38/2.98	2.32/2.89	2.41/2.94
Low noise and xtra low noise versions	Cooling capacity (1)	kW	230	258	300	335	354	402	420	478
	Absorbed power (2)	kW	101	109	128	138	155	173	182	209
	EER/ESEER		2.28/2.97	2.37/2.95	2.34/3.05	2.43/3.06	2.27/2.96	2.32/2.96	2.3/2.98	2.29/3.02
Compressor	Type		Accessible hermetic twin screw							
	Number		2							
	Rotation speed	rpm	2900							
	R407C refrigerant charge (kg)	circ.1	23	24	40	45	55	56	55	56
		circ.2	23	24	25	26	25	26	45	46
	Capacity control		Modulating from 25 to 100% (50 to 100% on each compressor)							
	Type of oil for R407C		BITZER BSE 170							
Oil charge for compressor	litres	2 x 9		15 + 9		22 + 9		22 + 15		
Evaporator	Type		Direct expansion shell and tubes							
	Number		1							
	Water capacity	litres	56,5		68		85			
	Hydraulic connections		VICTAULIC type							
	Maximum pressure on water side	bar	10							
Mini / maxi water flow	m³/h	30 / 82		40 / 100		60 / 135				
Air cooled condenser	Fans		Direct drive propeller type - 800 mm diameter							
	Number of fans		4		6		8			
	Rotation speed	rpm	HIGH PERFORMANCE version				905 rpm			
	Air flow	m³/h	88 000		136 000		132 000		180 000	
	Motor unit power	kW	2,6							
	Rotation speed	rpm	LOW NOISE - XTRA LOW NOISE versions				715 rpm			
	Air flow	m³/h	72 400		112 200		108 600		148 400	
Motor unit power	kW	1,8								
High performance version	Lw / Lp (3)	dB(A)	96/64		98/66		100/67			
Low noise version (LN)	Lw / Lp (3)	dB(A)	90/58		92/60		95/62			
Xtra low noise version (XLN)	Lw / Lp (3)	dB(A)	85/53		87/55		88/55			

POWERCAT LX - LXH - LXC			2500Z	2500Z HPS	2800Z	2800Z HPS	3050Z HPS	3400Z HPS	3750Z HPS	4200Z HPS
High performance version	Cooling capacity (1)	kW	522	594	605	690	740	820	903	1076
	Absorbed power (2)	kW	216	238	244	268	287	320	362	413
	EER/ESEER		2.42/3	2.5/2.95	2.47/3.05	2.57/3.06	2.57/3.26	2.55/3.05	2.49/3.07	2.4/3.07
Low noise and xtra low noise version	Cooling capacity (1)	kW	509	582	595	685	725	803	881	1045
	Absorbed power (2)	kW	216	235	240	262	303	331	364	437
	EER/ESEER		2.36/3.01	2.48/2.95	2.48/3.16	2.61/3.15	2.39/3.21	2.42/3.1	2.42/3.21	2.35/3.13
Compressor	Type		Accessible hermetic twin screw						3	
	Number		2						3	
	Rotation speed	rpm	2900							
	R407C refrigerant charge (kg)	circ.1	55	60	62	63	62	60	60	86
		circ.1	55	60	62	63	50	60	60	92
		circ.1	-	-	-	-	50	45	60	92
	Capacity control		Modulating from 25 to 100% (50 to 100% on each compressor)				Modulating from 17 to 100% (50 to 100% on each compressor)			
Type of oil for R407C		BITZER BSE 170								
Oil charge for compressor	litres	2 x 22				22 + 2 x 15		2 x 22 + 15		3 x 22
Evaporator	Type		Direct expansion shell and tubes							
	Number		1							
	Water capacity	litres	122				219		440	
	Hydraulic connections		VICTAULIC type							
	Maximum pressure on water side	bar	10							
Mini / maxi water flow	m³/h	60 / 135				80 / 180		80 / 216		
Air cooled condenser	Fans		Direct drive propeller type - 800 mm diameter							
	Number of fans		8		12		15			
	Rotation speed	rpm	HIGH PERFORMANCE version				905 rpm			
	Air flow	m³/h	176 000		276 000		272 000		268 000	
	Motor unit power	kW	2,6							
	Rotation speed	rpm	LOW NOISE - XTRA LOW NOISE versions				715 rpm			
	Air flow	m³/h	144 800		228 000		224 400		220 800	
Motor unit power	kW	1,8								
High performance version	Lw / Lp (3)	dB(A)	101/68		101/68		101/68		102/69	
Low noise version (LN)	Lw / Lp (3)	dB(A)	96/63		98/65		97/64		98/65	
Xtra low noise version (XLN)	Lw / Lp (3)	dB(A)	89/56		91/58		90/57		91/58	

(1) Cooling capacity for 12°C / 7°C evaporator chilled water and 35°C condenser air inlet.

(2) Compressors + fans absorbed power

(3) Lw : Global sound power level - Lp : Global sound pressure level at 10 metres, in free field, following ISO 3744 regulation



Air cooled chillers

POWERCIAT LX R407C

ELECTRICAL CHARACTERISTICS

POWERCIAT LX - LXH - LXC		1200Z	1200Z HPS	1500Z	1500Z HPS	1850Z	1850Z HPS	2150Z	2150Z HPS							
COMPRESSORS (1)																
Maximum nominal current	A	216 (2 x 108)		270 (162+108)		324 (216+108)		378 (216+162)								
Part winding starting current (3)	A	377		531		720		774								
Starting current with SOFT START option (3)	A	283		377		506		560								
FAN MOTORS (1)																
HIGH PERFORMANCE version 905 rpm																
Maximum nominal current	A	24		36				48								
LOW NOISE - XTRA LOW NOISE versions 715 rpm																
Maximum nominal current	A	12,8		19,2				25,6								
LX ANTIFREEZE PROTECTION (OPTION) (2)																
Evaporator heating element power	W	180				240										
Maximum nominal current	A	0,80				1,05										
LXC ANTIFREEZE PROTECTION (OPTION) (2)																
Evaporator + hydraulic pipe + expansion vessel heating element power	W	420		480				540								
Maximum nominal current	A	1.83		2.1				2.35								
LXH ANTIFREEZE PROTECTION (OPTION)																
Evaporator heating element power + piping	W	300		420				480								
Maximum nominal current	A	1,3 (2)		1.83 (2)				2.1								
Hydraulic module heating element power	W			1500												
Maximum nominal current	A			2,3 (1)												
CONTROL AUXILIARY CIRCUIT (2)																
Maximum nominal current	A			4												
Transformer power	VA			1600												
POWERCIAT LX - LXH - LXC		2500Z	2500Z HPS	2800Z	2800Z HPS	3050Z HPS	3400Z HPS	3570Z HPS	4200Z HPS							
COMPRESSORS (1)																
Maximum nominal current	A	432 (2 x 216)		492 (2 x 246)		540 (216 + 2 x 162)	594 (2 x 216 + 162)	648 (3 x 216)	738 (3 x 246)							
Part winding starting current (3)	A	828		911		936	990	1044	1157							
Starting current with SOFT START option (3)	A	614		647		722	776	830	924							
FAN MOTORS (1)																
HIGH PERFORMANCE version 905 rpm																
Maximum nominal current	A	48		72				90								
LOW NOISE - XTRA LOW NOISE versions 715 rpm																
Maximum nominal current	A	25,6		38,4				48								
LX ANTIFREEZE PROTECTION (OPTION) (2)																
Evaporator heating element power	W			320												
Maximum nominal current	A			1,40												
LXC ANTIFREEZE PROTECTION (OPTION) (2)																
Evaporator + hydraulic pipe + expansion vessel heating element power	W			560												
Maximum nominal current	A			2.5												
LXH ANTIFREEZE PROTECTION (OPTION)																
Evaporator heating element power + piping	W	560				500										
Maximum nominal current	A	2,5 (2)				2,20 (2)										
Hydraulic module heating element power	W			1500												
Maximum nominal current	A			2.3 (1)												
CONTROL AUXILIARY CIRCUIT (2)																
Maximum nominal current	A			4												
Transformer power	VA	1600				2000										
SINGLE PUMPS (LXH - LXC ONLY) (1)																
Number		102	103	104	105	106	107	108	109	110	111	112	113	114	115	116
Power	kW	3	4	4	5,5	5,5	7,5	7,5	11	11	11	15	15	18,5	22	30
Maximum nominal current	A	6,3	8,0	8,0	10,3	10,3	13,8	13,8	20,0	20,0	20,0	26,5	26,5	32,5	39	53
TWIN PUMPS (LXH - LXC ONLY) (1)																
Number		202	203	204	205	206	207	208	209	210	211	212	213	214	215	216
Power	kW	3	4	4	5,5	5,5	7,5	7,5	11	11	11	15	15	18,5	22	30
Maximum nominal current	A	6,3	8,0	8,0	10,3	10,3	13,8	13,8	20,0	20,0	20,0	26,5	26,5	32,5	39	53

(1) Current for 400V / 3PH / 50HZ voltage

(2) Current for 230V / 1PH / 50HZ voltage

(3) Starting current of the biggest compressor + maximum current of others

compressors in full load

Nominal current for cables selection = add the maximum nominal currents indicated in the above tables



DIMENSIONS LX - LXH

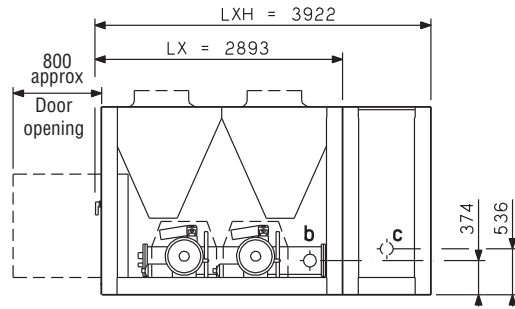
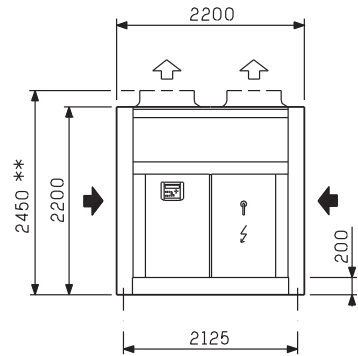


FIG.1



** For XTRA LOW NOISE version only

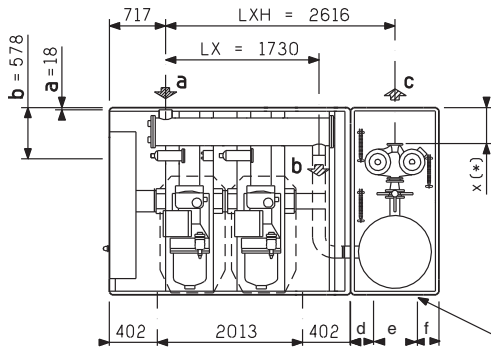
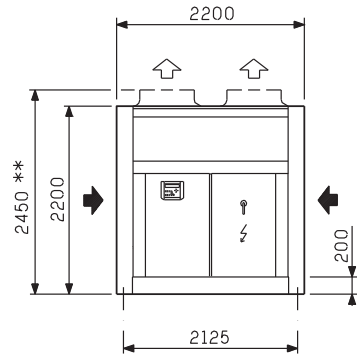
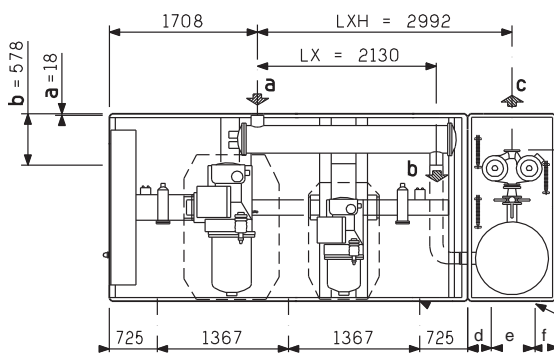
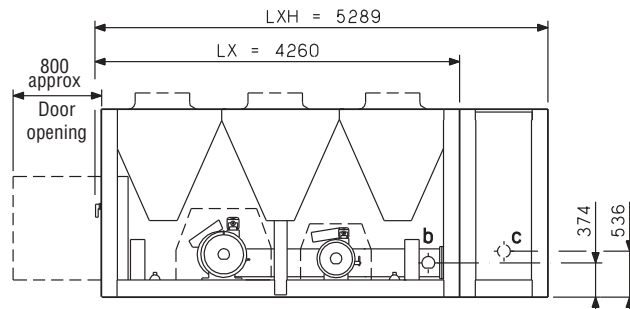


FIG.2



** For XTRA LOW NOISE version only



d	288
e	453
f	288

Models	Fig.	inlet LX / LXH a	Chilled water outlet LX b	outlet LXH c	Weight kg	
					empty	in operation
LX 1200Z (HPS)	1	VICTAULIC DN 125	DN 125	*	2667	2753
LXH 1200Z (HPS)					3417	4553
LX 1500Z (HPS)	2	VICTAULIC DN 125	DN 125	*	3459	3557
LXH 1500Z (HPS)					4209	5357
LX 1850Z (HPS)	2	VICTAULIC DN 125	DN 125	*	3908	4006
LXH 1850Z (HPS)					4658	5806

* c according to the selected pump (see page 26)

DIMENSIONS LX - LXH

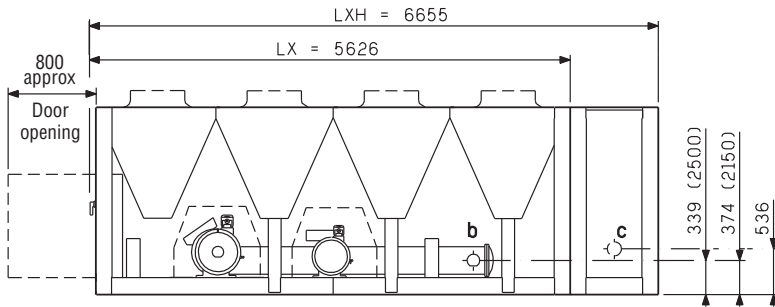
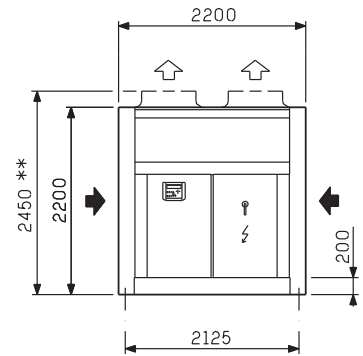
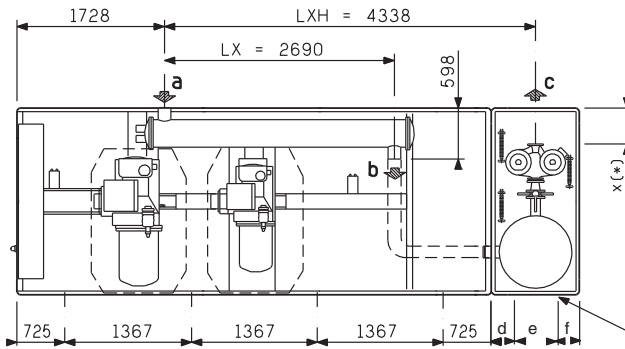


FIG. 3



** For XTRA LOW NOISE version only



8 or 12 holes for ground fitting diameter 20.2 mm

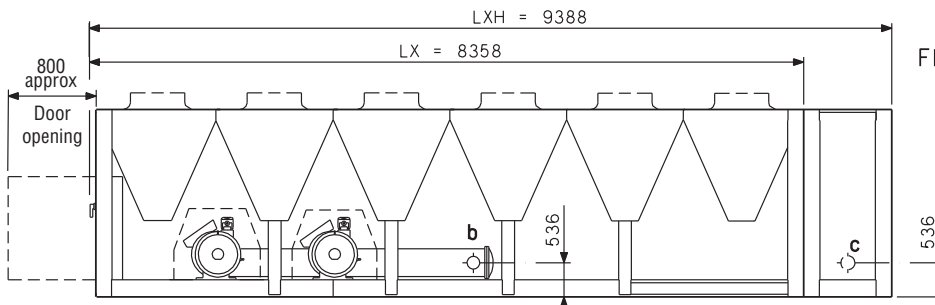
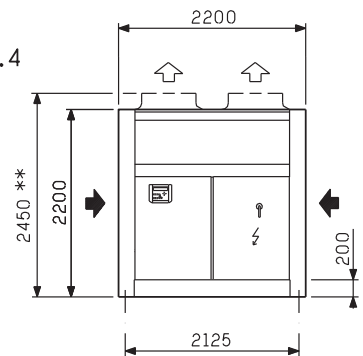
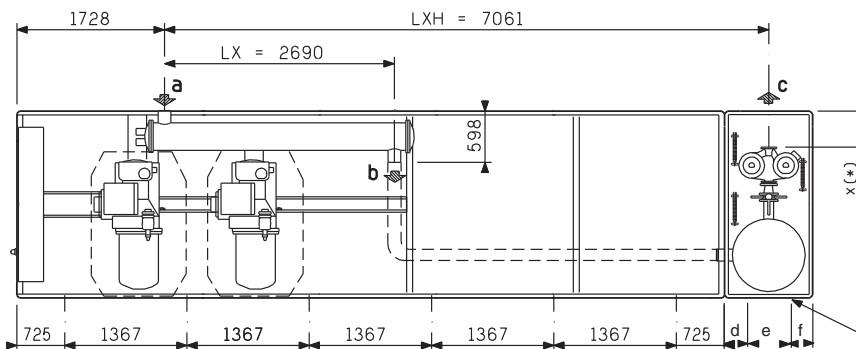


FIG. 4



** For XTRA LOW NOISE version only



12 or 16 holes for ground fitting diameter 20.2 mm

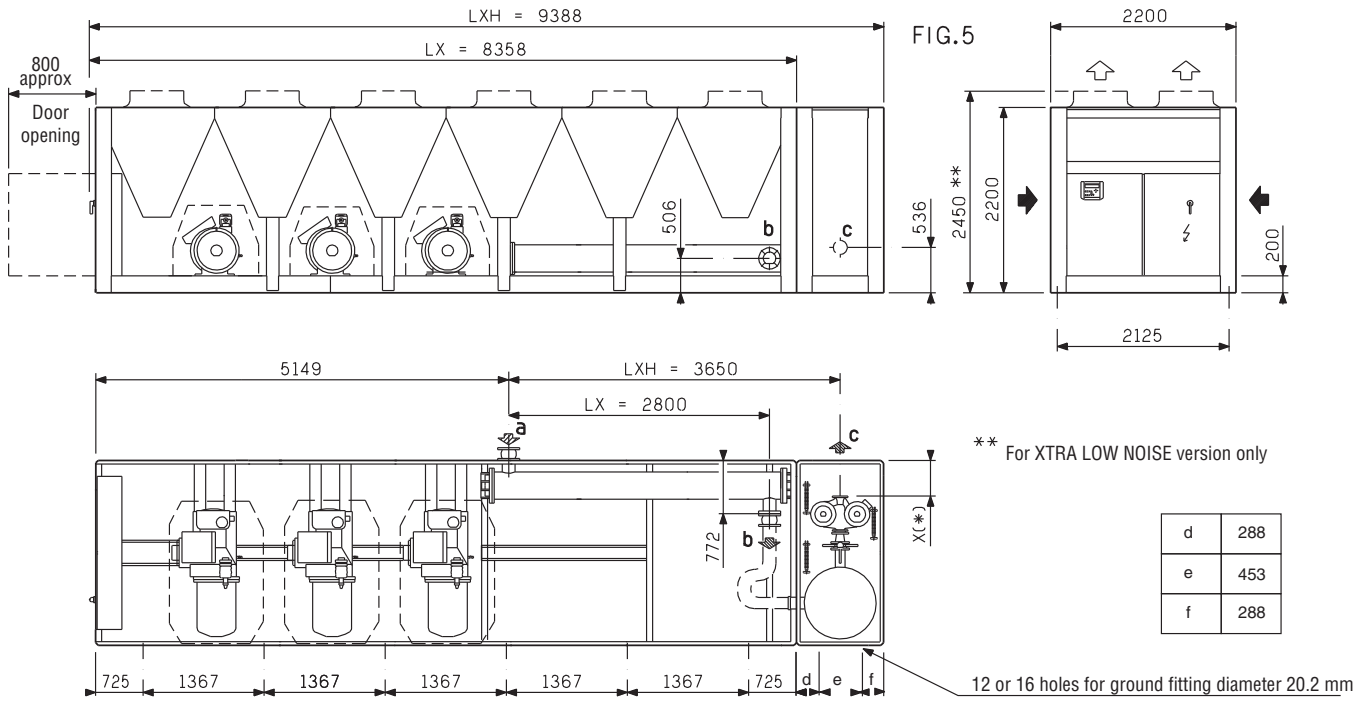
d	288
e	453
f	288

Models	Fig.	inlet LX / LXH a	Chilled water outlet LX b	outlet LXH c	Weight kg	
					empty	in operation
LX 2150Z (HPS)	3	VICTAULIC DN 125	DN 125	*	4652	4767
LXH 2150Z (HPS)					5402	6567
LX 2500Z (HPS)	3	VICTAULIC DN 150	DN 150	*	5177	5327
LXH 2500Z (HPS)					5927	7127
LX 2800Z (HPS)	4	VICTAULIC DN 150	DN 150	*	6071	6221
LXH 2800Z (HPS)					6821	8021

* c according to the selected pump (see page 26)



DIMENSIONS LX - LXH



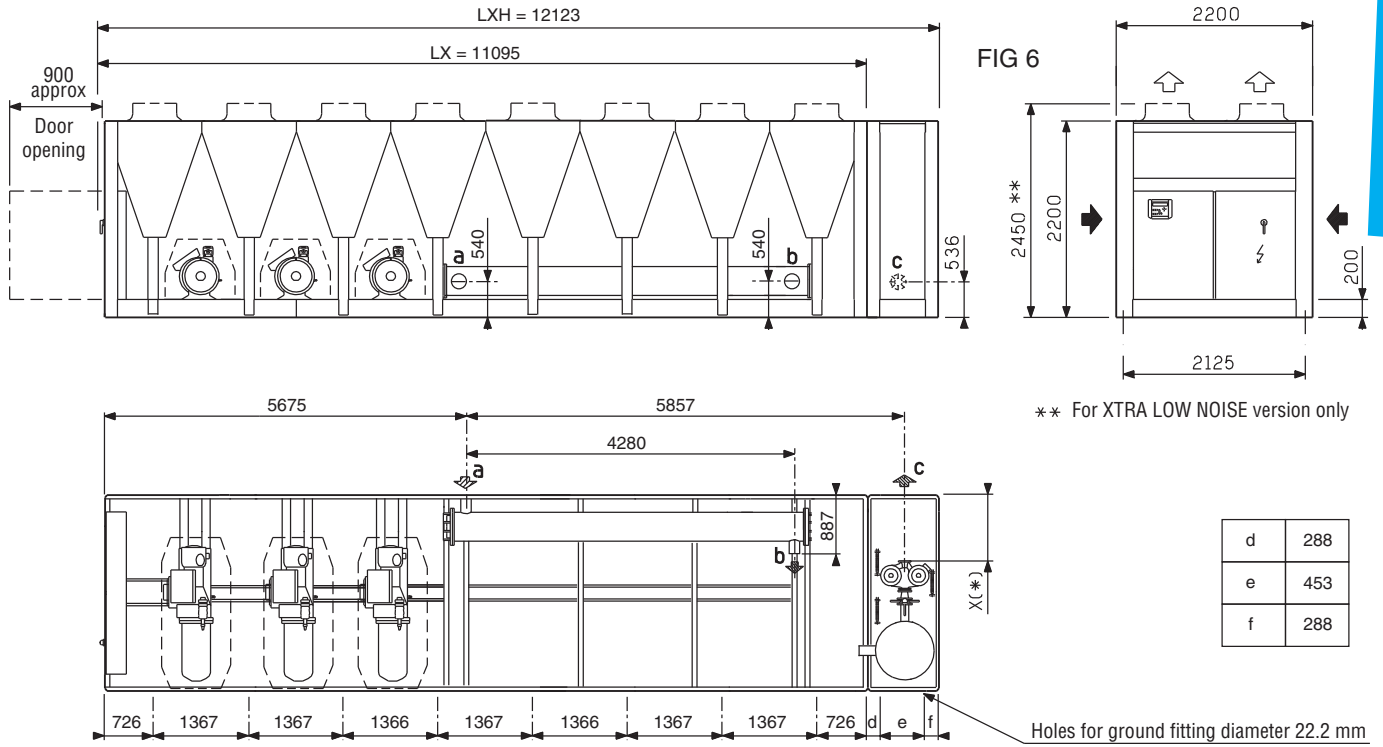
Models	Fig.	Chilled water			Weight kg	
		inlet LX / LXH a	outlet LX b	outlet LXH c	empty	in operation
LX 3050Z HPS	5	VICTAULIC DN 200	DN 200	*	6940	7186
LXH 3050Z HPS					7690	8986
LX 3400Z HPS	5	VICTAULIC DN 200	DN 200	*	7383	7629
LXH 3400Z HPS					8133	9429
LX 3750Z HPS	5	VICTAULIC DN 200	DN 200	*	7826	8072
LXH 3750Z HPS					8576	9872

* c according to the selected pump (see p.26)



Air cooled chillers

DIMENSIONS LX - LXH



Models	Fig.	Chilled water			Weight kg		
		inlet LX / LXH a	outlet LX b	outlet LXH c	empty	in operation	
LX 4200Z HPS	6	VICTAULIC DN 200			*	10074	10514
LXH 4200Z HPS						11068	12098

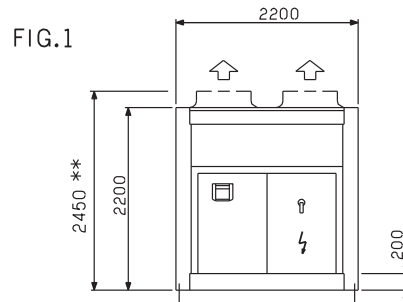
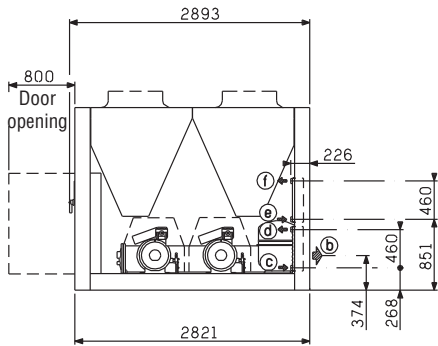
Models	1200 - 1500 - 1850 - 2150 - 2500 - 2800 - 3050 - 3400 - 3750 - 4200		
Single pumps	102 - 103 - 105 - 107 - 109	104 - 106 - 108 - 110 - 112	111 - 113 - 114 - 115 - 116
Twin pumps	202 - 203 - 205 - 207 - 209	204 - 206 - 208 - 210 - 212	211 - 213 - 214 - 215 - 216
Flanges	DN 65 - PN 16	DN 80 - PN 16	DN 100 - PN 16
X (LXH)	364	374	448

* c according to the selected pump select above

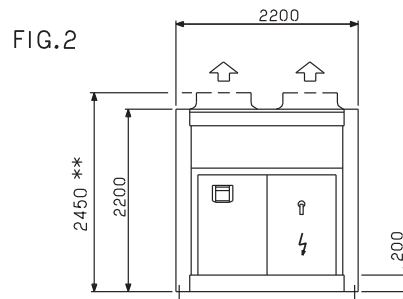
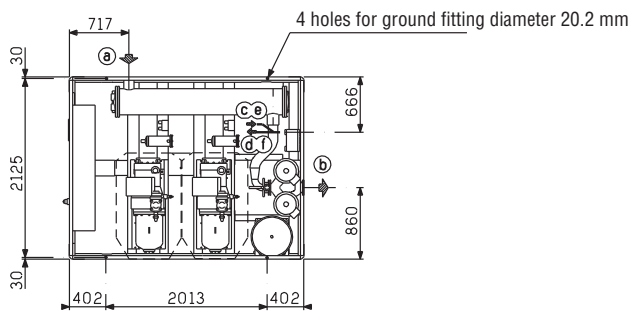
Hydraulic equipment delivered separately for LXH 4200Z HPS



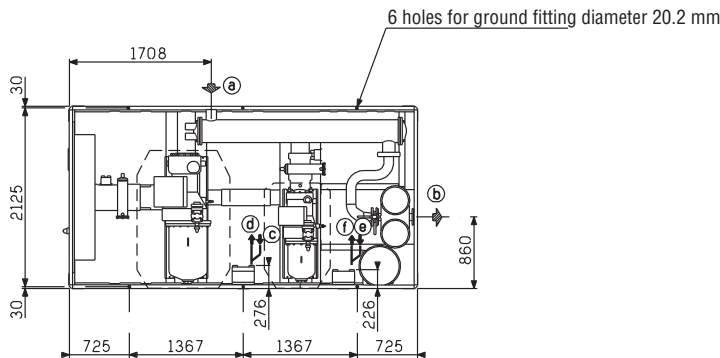
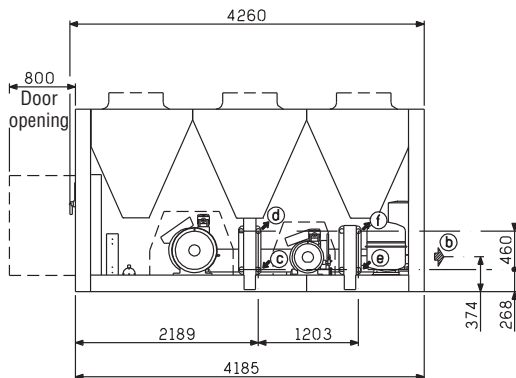
DIMENSIONS LXC



** For XTRA LOW NOISE version only



* x For XTRA LOW NOISE version only



Models	Fig.	Chilled water		Desuperheaters hot water		Weight kg	
		inlet LXC a	outlet LXC b	inlet LX / LXC / LXH c - e	outlet LX / LXC / LXH d - f	empty	in operation
LXC 1200Z (HPS)	1	VICTAULIC DN 125	*	G 2"	G 2"	3017	3203
LXC 1500Z (HPS)	2	VICTAULIC DN 125	*	G 2"	G 2"	3809	3987
LXC 1850Z (HPS)	2	VICTAULIC DN 125	*	G 2"	G 2"	4258	4456

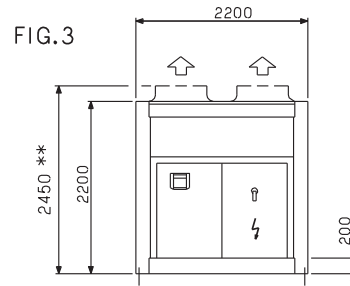
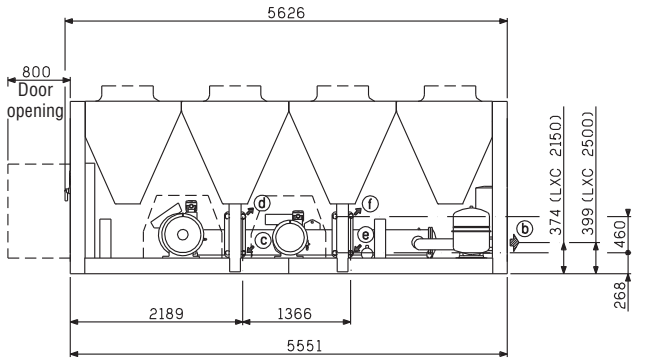
* b according to the selected pump (see page 30)

NOTE : Brazed plates desuperheaters optional (1 per refrigerant circuit) available for versions LX - LXC - LXH

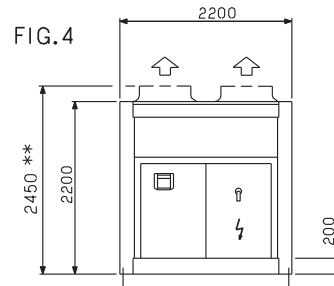
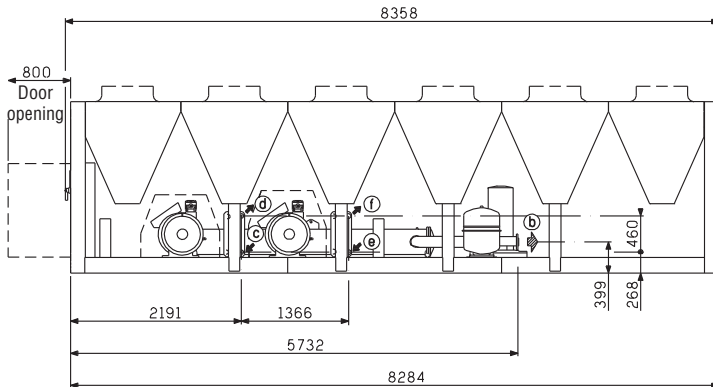
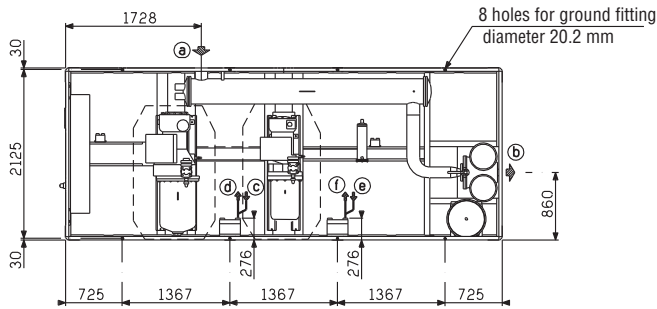


Air cooled chillers

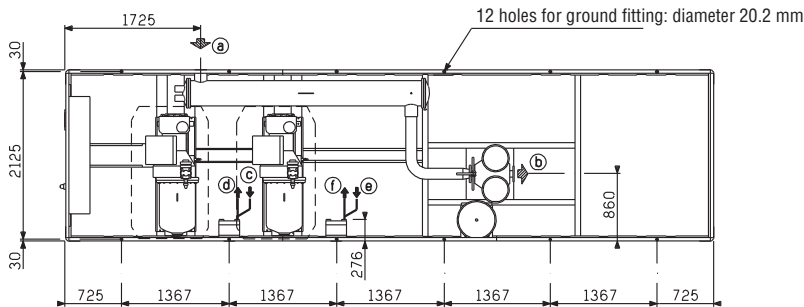
DIMENSIONS LXC



** For XTRA LOW NOISE version only



** For XTRA LOW NOISE version only



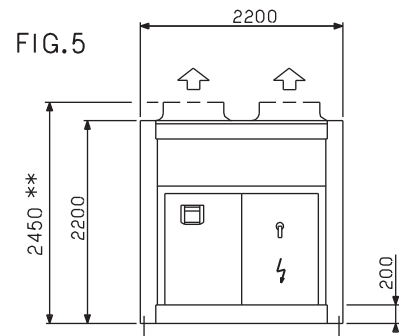
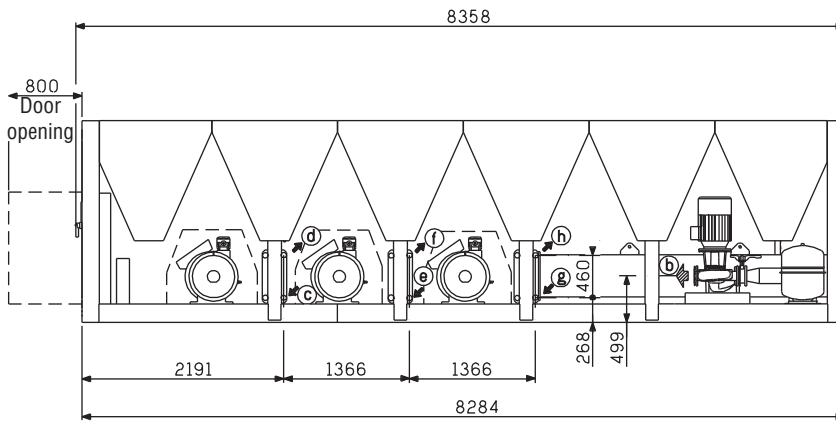
Models	Fig.	Chilled water		Desuperheaters hot water		Weight kg	
		inlet LXC a	outlet LXC b	inlet LX / LXC / LXH c - e	outlet LX / LXC / LXH d - f	empty	in operation
LXC 2150Z (HPS)	3	VICTAULIC DN 125	*	G 2"	G 2"	5002	5217
LXC 2500Z (HPS)	3	VICTAULIC DN 150	*	G 2"	G 2"	5527	5777
LXC 2800Z (HPS)	4	VICTAULIC DN 150	*	G 2"	G 2"	6421	6671

* **b** according to the selected pump (see page 30)

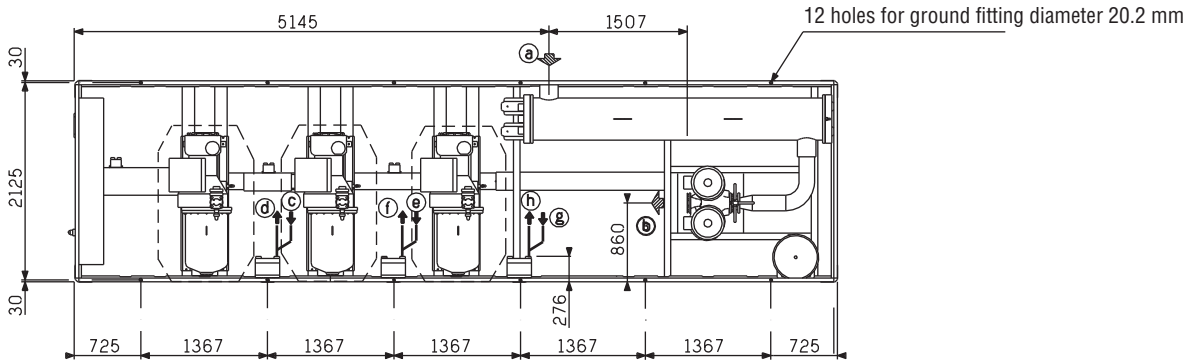
NOTE : Brazed plates desuperheaters optional (1 per refrigerant circuit) available for versions LX - LXC - LXH



DIMENSIONS LXC



** For XTRA LOW NOISE version only



Models	Fig.	Chilled water		Desuperheaters hot water		Weight kg	
		inlet LXC a	outlet LXC b	inlet LX / LXC / LXH c - e - g	outlet LX / LXC / LXH d - f - h	empty	in operation
LXC 3050Z HPS	5	VICTAULIC DN 200	*	G 2"	G 2"	7290	7636
LXC 3400Z HPS	5	VICTAULIC DN 200	*	G 2"	G 2"	7733	8079
LXC 3750Z HPS	5	VICTAULIC DN 200	*	G 2"	G 2"	8176	8522

* b according to the selected pump (see p.30)

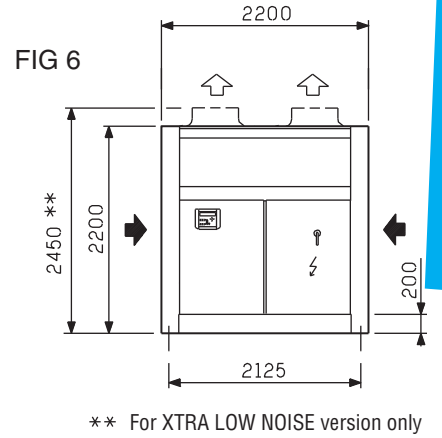
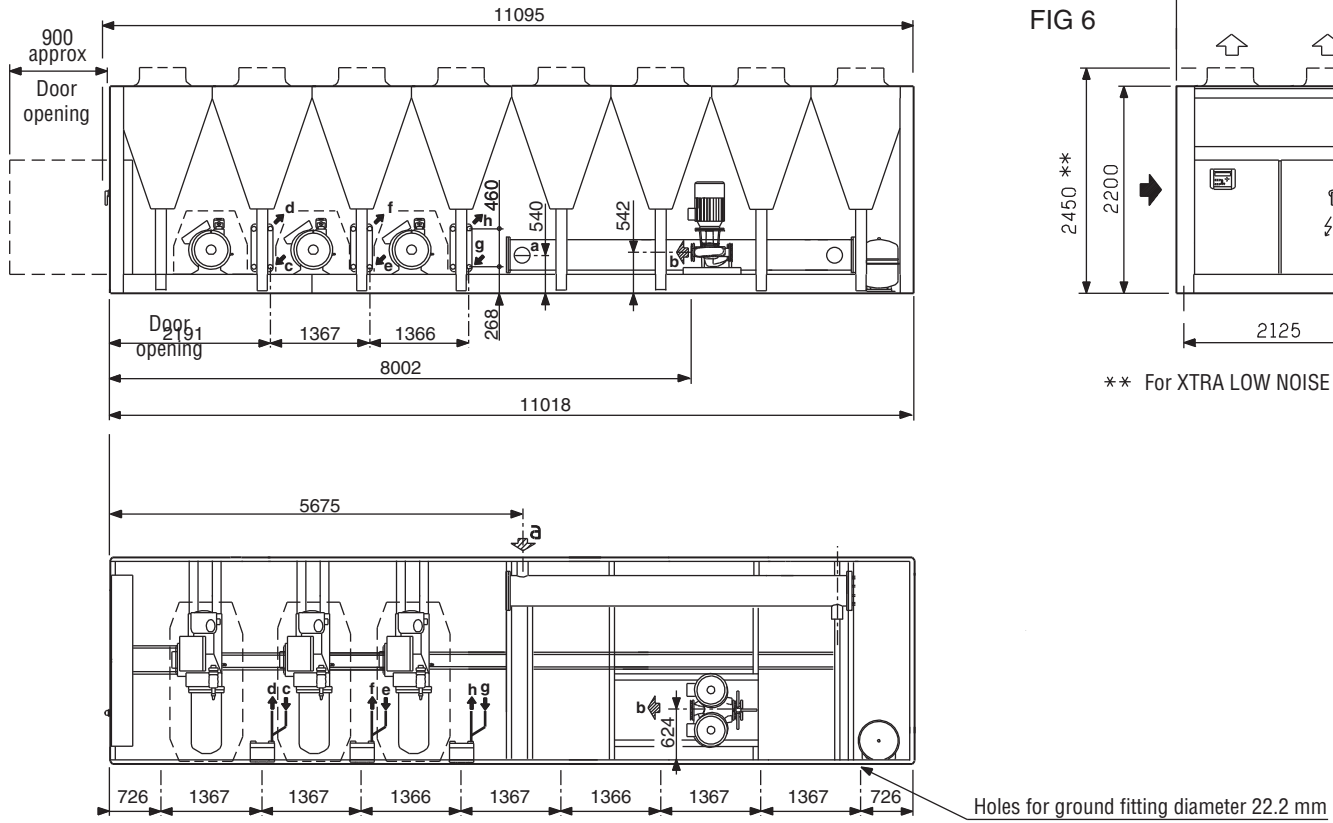
NOTE : Optional brazed plates desuperheaters (1 per refrigerant circuit) available for versions LX - LXC - LXH



Air cooled chillers

POWERCIAT LX R407C

DIMENSIONS LXC



Models	Fig.	Chilled water		Desuperheaters hot water		Weight kg	
		inlet LXC a	outlet LXC b	inlet LX / LXC / LXH c - e - g	outlet LX / LXC / LXH d - f - h	empty	in operation
LXC 4200Z HPS	6	VICTAULIC DN 200	*	G 2"	G 2"	10630	11100

Models	1200 - 1500 - 1850 - 2150 - 2500 - 2800 - 3050 - 3400 - 3750 4200		
Single pumps	102 - 103 - 105 - 107 - 109	104 - 106 - 108 - 110 - 112	111 - 113 - 114 - 115 - 116
Twin pumps	202 - 203 - 205 - 207 - 209	204 - 206 - 208 - 210 - 212	211 - 213 - 214 - 215 - 216
Flanges	DN 65 - PN 16	DN 80 - PN 16	DN 100 - PN 16

* **b** according to the selected pump above

NOTE : Optional brazed plates desuperheaters (1 per refrigerant circuit) available for versions LX - LXC - LXH



ADVISES FOR INSTALLATION

■ Location

- The **POWERCIAT packaged units LX - LXC and LXH** are designed for outdoor installation.
- A free space of 2 meters around the unit is necessary for a good air circulation and maintenance.
- Choose the location in order to respect environment (Acoustic level, etc,...)
- The sound level problems must be analysed in detail

So, before installation of the unit, study the best position, if necessary with a sound technician.

If necessary, install the unit on ant-ivibration mounts and equip the hydraulic pipes with flexible connectors (**recommended equipments**)

■ Electrical connections

- All the indications concerning electrical connections are mentioned on the wiring diagram delivered with the unit (they must be respected).
- These connections must be made following good engineering practice and in accordance to the norm in force.
- Leave the control auxiliary circuit under voltage to allow operation of the crankcase heater and the antifreeze heater (option)
- The customer electrical supply line must be fitted with a circuit breaker protection (to be supplied by the customer)

POWERCIAT LX - LXH - LXC

■ Antifreeze protection

- If there is a risk of freezing :
 - a - either supply evaporator antifreeze protection option (LX model) or evaporator antifreeze protection + hydraulic equipment option (LXH - LXC models) if installation runs with pure water
 - b - or protect the installation with glycol concentration
 - c - or drain the installation

NOTE : With the antifreeze protection, the unit is not protected against freezing anymore if there is an electrical supply failure.

POWERCIAT LX

■ Hydraulic connections

- The hydraulic connections must be made following good engineering practice
- Plan all the necessary accessories for an hydraulic circuit :
 - Expansion vessel
 - Drains at low points
 - Shut off valves
 - Air vent at high points, etc.
- Make sure that the installation water contents is sufficient
- Plan, if required, a buffer tank

■ Commissioning

- In accordance with our commissioning and maintenance brochure

■ Maintenance

- In accordance with our maintenance brochure
- Take out a maintenance contract



XTRACONNECT CONTROL

ERGONOMIC INTERFACE PANEL

- LDC multilingual screen (2 lines of 20 characters)
- Pressures and temperatures reading
- Pump control
- Communication

Available free contacts inputs / outputs

- Inputs :**
- External ON/OFF contact
 - Chilled water pump external ON/OFF contact
 - Setpoint 1/2 selection
 - General fault
 - Emergency stop
 - Compressors load shedding
 - 0 - 20 mA remote control
- Output :**
- General fault of the unit
 - General fault per circuit
 - Pump control

RS 485 OUTPUT IN STANDARD

- MODBUS-JBUS open Protocol (standard)**
- LONWORKS Protocol (option)**

FREE CONTACTS RELAY CARD (OPTION)

Available outputs :

- Water flow fault
- Antifreeze fault
- Pump fault
- Fans fault
- Emergency stop fault
- Low and high pressure fault
- Compressors safety fault
- Compressors superheating fault
- Compressors lubrication fault
- Discharge temperature fault
- Compressors running

REMOTE CONTROL BOX (OPTION)

- Operation and design same as display console**

MULTICONNECT MULTI-UNIT MANAGEMENT (OPTION)

Main functions available:

- Management of up to 8 units on a single water loop
- Management in cooling mode (water chiller) or heating mode (heat pump)
- Management of chilled-water or hot-water pumps
- Centralised management of a backup unit
- Unit load shedding
- System time programming
- Energy storage mode management
- Fault management on each unit
- Unit running time balancing
- Integrated Modbus BMS link for obtaining information on unit operation and faults



Non contractual document. With the thought of material improvement always in mind, CIAT reserves the right, without notice, to proceed with any technical modification.

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CERTIFIED ISO 9001
QUALITY SYSTEM



Compagnie Industrielle d'Applications Thermiques - S.A. with a registered capital of 26 000 000 € - R.C.S. Belley B 545 620 114