

eat Pumps Gatalogue







LSE 360 - 920 kW Multi-scoll air condensed water chillers and heat pumps



LCS 200 - 530 kW Air condensed water chillers with screw compressor

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	MCW 5,5 - 40 kW	Water condensed water chillers and heat pumps	page 60
	MCR 4,8 - 34 kW	Condenserless unit (single refrigerant circuit)	page 64
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ONE HUNDRED YEARS OF HISTORY....

1906. Ugo Galletti settle down the first production facility. In the beginning the production was mainly devoted to the manufacture of ice mould and light carpentry.

1950.The production and technical evolution leads the company to become a supplier of important car and motor-bike manufacturers such as: Ferrari, Ducati ,Lamborghini, Morini.

1960. Galletti faces a big historical change: from manufacturing of components as a sub-supplier for other companies to own production of finished goods branded Galletti destined for end users. Galletti starts the manufacturing of heating units such as convector with copper/aluminium coils, and fan heaters for industrial application.

1975. Galletti starts the manufacturing of fan coil units; this is the first approach to the air conditioning field.

1986. Begin of a 15 years cooperation with a Japanese leading company in air conditionig. Galletti becomes the reference point of split systems in the Italian market.

1994. Galletti is one of the first companies in Europe to get the Eurovent certification.

1995. Galletti establish a new factory focused on the production of finned pack heat exchangers. First production of air condensed water chillers with cooling capacity from 6 to 180 kW.

1996. New production line of fan coils with a capacity of 700 units a day. **2001.** Galletti founds a new company to approach the market of high technology air conditioning applications:HiRef.The represents another milestone towards the Galletti air conditioning globalisation.

2003. Extension of the Bentivoglio factory area with a new 7.000 m² building, including a new logistic centre and training facilities.

2006. A century of history for an enterprise that can today boast 3 manufacturing plants occupying a total area of over 45,000 m², more than 250 employees, 1,700,000 fan coils sold, over 250,000 split air conditioners installed, 10 years of Eurovent certification and a consolidated distribution in the whole Europe.





"FROM THE PRESIDENT"

One hundred years of history represent an important achievement in the life of a company, surely not one to be taken for guaranteed: an achievement that also induces us to reflect on how its identity has changed over time in response to market needs, with the advent of new technologies and generational transitions.

Starting off from this thought we have attempted to trace and capture Galletti's history, to understand whether and to what degree the company has remained loyal to its origins, to that "policy of small steps" introduced by Ugo Galletti and passed down, like an heirloom, through the DNA of three generations: a business philosophy that asserts a strong, well-defined philosophy with reasoned, solid, concrete steps.

We have confronted this history and have played our own, albeit small, part, year after year, through changes, the devastations of war, the desire to start anew and rebuild, economic booms and technological revolutions. Nearly a century in which we have not sat down to rest but rather to observe, explore new opportunities, define possibilities for dialogue and trace new paths. As participants in its growth and evolution, we have seen and renewed the principles and values underlying its birth, always feeling them to be alive.

All this today represents our identity, alive from the start and preserved over time; we have given it no name but believe in it unswervingly.

We have felt the need to defend it with constancy, adapting it to new realities, yes, but always remaining completely ourselves.

It thus seemed to us an important story that could not be relegated to the memory of a few individuals, with the risk of being lost; a story that should rightly be shared with all past, present and future stakeholders and passed down to the new generation, conveying the strength of our roots.

This story has therefore taken the form of a publication, which also represents a tangible acknowledgement and sincere thanks to all those who over the years have helped make Galletti what it is today: a reality that two eyes can hardly take in.

Luigi Galletti

President of Galletti Group



DICHIARAZIONE DI CONFORMITÀ (E

La Società Galletti S.p.A. con sede in Via Romagnoli 12/a Bentivoglio (Bologna) - Italia, dichiara, sotto la propria responsabilità, che i refrigeratori d'acqua e pompe di calore delle serie:

ECH20, ECH20 H, MCA, MCA H, LCA, LCA H, MCC, MCC H, MCW, MCW-H, MPE, MPEH, MCE, MCEH, MFE, MXE apparecchi per impianti di condizionamento dell'aria destinati ad applicazioni per il condizionamento in ambito civile, sono conformi aquanto prescritto dalle Direttive 98/37/CE, 89/336/CEE, 92/31/CEE, 93/68/CEE, 2006/95/CE, 97/23/CE (PED).

Tali apparecchi sono il risultato dell'assemblaggio di componenti [compressori, scambiatori di calore a piastre saldobrasate, ricevitori di liquido, tubazioni, valvole di regolazione e di sicurezza] singolarmente dotati, quando previsto, di certificazione ai sensi delle direttive vigenti: la determinazione della categoria d'appartenenza delle macchine è il frutto dell'analisi dei componenti soggetti alla **PED** e corrisponde alla categoria più alta fra i componenti utilizzati.

Per ogni serie di macchine, la conformità dell'assieme è stata valutata da organismi notificati ed in applicazione delle procedure di valutazione (moduli) ai sensi dell'allegato II della direttiva 97/23 PED, come riportato nella tabella seguente:

DECLARATION OF CONFORMITY ()

Galletti S.p.A. with head office in Via Romagnoli 12/a Bentivoglio (Bologna) - Italia, declares herewith under its own responsibility that all water chillers and heat pumps series:

ECH20, ECH20 H, MCA, MCA H, LCA, LCA H, MCC, MCC H, MCW, MCW-H,

MPE,MPEH, MCE, MCEH, MFE, MXE units for air-conditioning systems for civil conditioning application, are produced in accordance with following directives: 98/37/CE, 89/336/CEE, 92/31/CEE, 93/68/CEE, 2006/95/CE, 97/23/CE (PED). These units are made by assembly of components (compressors, heat exchangers with braze welded plates, liquid receiver, pipelines, regulating and safety valves), each component, if requested by the law, has its own declaration in accordance with the directives in force: the determination of the units belonging category is the result of the analyse of all components subjected to the PED directive and correspond to the highest class between the used components.

For each unit series the conformity of the assembly has been evaluated by notified bodies through the application of procedure for evaluation (forms) according to the annex II of the **97/23 PED** directive, as reported in the following table:

Serie	Grandezza	Organismo Notificato	N° certificato	Procedura di valutazione di conformità	Categoria PED	Marcatura
Range	Size	Notified body	certificate	Conformity Compliance Module	PED category	Marking
ECH ₂ O - ECH ₂ O H	4-5-6-7	1115		Modulo D1	I	CE
MCA - MCA H	10-12-14	1115		Modulo D1	I	CE
MCA - MCA H	16-21-25-30-37-50-60	1115	_∞	Modulo D1	II	CE + PED
LCA - LCA H	045-050-060-070-080-090-105	1115	000	Modulo D1	II	CE + PED
MCC - MCC H	6-7-9-12-15	1115	2/2	Modulo D1	I	CE
MCC - MCC H	18-22-25-33-37	1115	del 06/02/2008	Modulo D1	II	CE + PED
MCW - MCW / H	5-7-10-12-15	1115	90	Modulo D1	I	CE
MCW - MCW / H	18-20-22-27-31-39	1115		Modulo D1	II	CE + PED
MPE - MPEH - MCE - MCEH	4-5-7-8	1115	4 . 4	Modulo D1	I	CE
MPE - MPEH - MCE - MCEH	9-10-11-13-15-18	1115	rev	Modulo D1	I	CE
MPE - MPEH - MCE - MCEH	19-20-21-23-24-26-27-28-31-32-34-35-39-40	1115	900∘N	Modulo D1	II	CE + PED
MPE - MPEH - MCE - MCEH	T30-T34-T40-T45	1115	N°(Modulo D1	II	CE + PED
MFE	5-6-8-11-13-16-17-20-23	1115		Modulo D1	I	CE
MXE	9-11-14-16	1115		Modulo D1	I	CE
MXE	19-21	1115		Modulo D1	II	CE + PED
LCA - LCA H	115-130-150-180-205-220-235-250-280-300	0398	B.05.0600AP-01 - 01-01-2005	Modulo D1	II	CE + PED

Gli apparecchi LCA ed LCA H (115-300) sono prodotti negli stabilimenti di Hiref S.p.A – Galletti Group, Via Spagna 31/33 Tribano (Padova) Units LCA and LCA H (115-300) are manufactured by Hiref S.p.A – Galletti Group, Via Spagna 31/33 Tribano (Padova) Italy

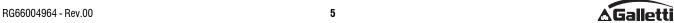
Bentivoglio, 16/07/2008

Galletti S.p.A. Luigi Galletti Presidente / President

Leaver



GALLETTI ADHERES TO THE EUROVENT CERTIFICATION PROGRAMME.
THE PRODUCTS CONCERNED APPEAR IN THE EUROVENT CERTIFIED PRODUCTS GUIDE.



EFFICIENT, SILENT, ADAPTABLE : IN ONE WORD COMFORT

- > R410A
- > DEDICATED FINNED PACK COIL
- > EXTREMELY LOW SOUND LEVEL
- > AUTO ADAPTIVE SET POINT
- > OPERATION WITH LOW WATER CONTENT (BUFFER TANK NOT NEEDED)

The chillers and heat pumps of the series MCE has been designed specifically for R410 A refrigerant, for the choice of the components, particularly for heat exchangers size and the logic of the operations. Studies and bench tests give the possibility to develop an extremely silent range, with high efficiency.

11 models, only cooling and in heating pumps, compose the range, with cooling capacity from 9 to 39 kw and heating capacities from 10 to 44 Kw.

ADAPTABLE FOR ANY REQUEST

The wide possibility of configuration in terms of number of models available in the range, and in terms of options and accessories make the MCE series, the perfect product to be adapted to all type of plants and design requirements, reducing the time of installation.

All the options are available with no need to modify the dimensions of the unit.

Options

- Built in hydronic kit
- Electronic expansion valve which quickly adapt the operation of the unit to the load variation and maximize the partial loads efficiency
- Heat recovery for hot water production in the summer time to increase the effective efficiency of the system

PLUG&PLAY

MCE allowed to incorporate the hydronic kit complete with circulation pump (body and rotor in inox), expansion vessel, buffer tank, safety valve, pressure gauge and water filter.

All the machines are bench tested in the end of the production cycle, to reduce the time of the start up.





EXTREMELY LOW SOUND LEVELS

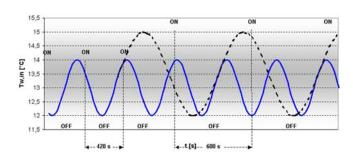
The use of extremely silent fans installed in performed profile house, running with low pressure drops thanks to the presence of finned pack heat exchangers with 8mm diameter copper tube.

Technical compartments and compressors could be acoustically insulated to obtain extremely low nose units.

AUTO ADAPTIVE SET POINT

The logic of the control allowed to use the MCE units with water contents extremely low , modifying the effective set point in function of the real instantaneous thermal loads.

The philosophy of the project allowed to combine the auto adaptive logic to the benefit of the built in inertial accumulation, maintaining the same dimensions of the units.



A sensor is measuring the outdoor air temperature modifying automatically the unit setpoint to adapt it to the plant' real needs.

RG66004964 - Rev.00

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CONSTRUCTIVE FEATURES

STRUCTURE

Structure and base built from galvanised sheet steel coated with corrosion-proof paint, RAL 9002 colour.

All bolts and screws and fastening devices are made of non-oxidisable materials, or carbon steel that has undergone surface-passivating treatments.

The compressor compartment is completely sealed and may be accessed on 3 sides thanks to easy-to-remove panels that greatly simplify maintenance and inspection.

The compressor compartment can be acoustically insulated on request in order to reduce the sound emission of the unit.

BUILT-IN HYDRONIC KIT

 High performance pump completely (body and rotor) made of stainless steel suitable ready to operate with glycol mix up to 35%.
 The pump motor is complete with internal thermal protection.

The pump is located in the compressor comparment and is easely reachable thanks to the openable panels.

The water pump is cooled by fresh air through a suitable grille.

- Expansion vessel.
- Safety valve.
- Filling valve.
- Automatic air purge.
- Differential pressure switch and antifreeze thermostat with probe on leaving water side.
- Buffer tank dowstream to the evaporator, best solution to reduce the chilled water variation due to the compressor ON/OFF operation.
- The Mechanical Y Filter is standard for all the versions to protect the plate evaporator.

REFRIGERANT CIRCUIT

- Scroll compressor.
- Heat exchanger with stainless steel braze-welded plates optimised for type of plate and distribution for R410A.
- Finned block condenser coil with 8 mm copper pipping and aluminium fins, characterized by large dimensions.
- Mechanical drier filter.
- Refrigerant sight glass with humidity indicator.
- Thermostatic valve with external equalization and integrated MOP function.
- 4-way reversing valve (heat pump only).
- Check valves (heat pump only).
- Liquid receiver (heat pump only).
- High and low pressure switches.
- Safety valve.
- Schrader valves for checks and/or maintenance.
- Refrigerant manometers (options).

FAN MOTOR ASSEMBLY

Fan of axial type with airfoil shapes blades provided with protection grille and housed in a nozzle with special shape that icrease its performance. Fans are housed in nozzles with special shape to increase performance. Fans are directly coupled with low speed (6/8 poles) motors, protected with a thermal cutout.

Fan motor assembly is connected to the unit through rubber vibration dampers and its supported by a deidicated frame.

The use of finned pack coils with 8mm diameter copper pipe reduce the pressur drop on air side decreasing the sound level.

The condensation control (on pressure base) adjust automatically the fan speed, reducing the noise emission of the unit in the night operation and when the unit runs at partial loads.

FINNED PACK

Finned pack heat exchangers with 8mm diameter copper tube, characterised by a large surfacce and specially designed to speed up the defrost cycle and to maximaze the integrate capacity of the unit.

ELECTRIC BOX

The electric box is built and wired according to the EEC 73/23 (LVD), to the 89/336 (EMCD) and related standards. Built with steel panels is protected by the unit's panels.

MICROPROCESSOR CONTROL

The control panel enables the complete control of MCE unit and can be easely accessed through a polycarbonate flap with IP 65 protection class.



The controller autoadaptive function

allowed the unit operartion with low water content avoiding the use of the buffer tank.

The outdoor temperature measure allows to adjust atomatically the unit set point to the real thermoal load in cooling operation and to keep the unit operate even at the most critical condition in winter time.

The controller is complete with MODBUS for an immediate conneted to ERGO network.

Main functions:

- Control of the entering water temperature.
- Defrosting management (MCE-H)
- fan speed control on pressure base (opzionale)
- Complete alarm management
- Automatic set point adjustment depending on the outdoor air tenmperature
- Can be conneted to an RS485 serial line (optional) for supervision/ teleassisitance operation
- A remote terminal that reproduces the control functions is available as optional (not compatible with ERGO).

Controlled devices:

- Compressor
- Fans
- 4-way reversing valve (MCE-H)
- Water pump
- Antifreeze kit (optional)
- Alarm relay

AVAILABLE OPTIONS

Built in hydronic kit

Condensation control for low ambient temperature operation

Compressor compartment insulation

Refrigerant gauges

Antifreeze kit

Electronic expansion valve

Partial heat recovery system 25% complete with on/off contact for circulation pump (not supplied)

Special treatment on finned coil (copper/copper, cataphoresysl blygold) Remote control panels

Dampers

Condensing coil protection grille



HOW TO PLACE AN ORDER

MCE water chillers and heat punmps can be configured in order to meet many possible installation requirements.

Code

	Commercial name of the series
MCE	Air condensed water chiller and reversible heat pumps
	Model
009	
011	
013	Give information on the cooling capacity of the standard model
015	
018	
019	
023	
026	
031	
034	
039	
	Operation
C	Cooling only
Н	Heat pump

Power supply

 $400 V\,3N\,50\,Hz$

230V - 1 - 50Hz

400V 3N 50 Hz + magnetic breaker230V - 1 - 50Hz + magnetic breaker

0 M

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Options and unit configuration

13 digits which customise the unit complying with the customer's requirements

Diait	Nome	Description
Digit	Name	Description
1	-	ion valve
	0	Thermostatic
	Α	Electronic
2	Waterp	
	0	Not present
	1	Pump, ex. vessel, water charge valve
3	Buffer 1	
	0	Not present
	S	Present
4	Heatre	
	0	Not present
	D	Partial (25%) with auxiliary contact for pump (cooling only
		models)
5	Conden	sing control
	0	Not present
	C	With modulating air flow
6	Antifre	eze kit
	0	Not present
	E	Present on standard unit
	P	Present, unit with pump and vessel
	S	Present, unit with pump, vessel and tank
7	Acousti	ic insulation
	0	Not present
	1	Sound proofing insulation for compressor housing
8	Refrige	rant circuit accessories
	0	Not present
	M	Refrigerant gauges
9	Remote	e control panel
	0	Not present
	2	RS485 port (Modbus + Carel protocol)
	S	Simplified
	M	BASE microprocessor (modbus excluded)
10	Special	coil
	0	Standard
	R	Copper / Copper
	C	Cataphoresis
	В	Blygold
11	Protect	ion grille
	0	Not present
	G	Present
12	Compre	essor option
	0	Not present
	4	Low temperature air/water
13	Control	•
	1	BASE microprocessor

N.B. The choice of some options an prevent the choice of other options or oblige the selection of other digit.

Please contacfr Galletti for verification

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COMFORT water chillers and heat pumps MCE series

		Tech	nical d	ata wat	er chille	er MCE							
MCE-C		009M	009	011	013	015	018	019	023	026	031	034	039
Power supply	V-ph-Hz	230-1-50						400-3N-50)				
Cooling capacity	kW	8,92	8,92	11,32	12,62	14,55	16,90	19,37	22,48	25,77	31,16	34,13	39,19
MCE CB Total power input	kW	3,36	3,36	4,37	4,41	5,35	6,57	7,42	8,54	9,40	10,71	12,19	13,38
EER		2,66	2,65	2,59	2,86	2,72	2,57	2,61	2,63	2,74	2,91	2,80	2,93
ESEER		3,16	3,16	3,15	3,45	3,33	3,13	3,05	3,09	3,11	3,38	3,33	3,47
MCE CP CS Total power input	kW	3,73	3,73	4,74	4,78	5,72	6,94	7,79	8,91	9,77	11,26	12,74	13,93
Maximum power input	kW	5,1	7,2	8,6	8,9	10,5	12,5	13,6	15,7	17,4	19,1	22,1	22,7
Maximum current absorption	Α	26,3	14,4	16,9	17,4	20,0	24,3	26,2	29,7	32,6	34,6	39,6	40,6
Starting absorbed current	Α	99	50	65	65	68	75	104	104	132	166	161	163
n° of scroll compressors / circuits		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
Refrigerant charge	kg	2,3	2,3	2,3	3,0	3,1	3,1	3,7	4,8	5,0	6,4	6,6	9,1
Low/high pressure switch	bar	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42
n° of axial fan		2	2	2	2	2	4	4	4	4	1	1	1
Air flow	m³/h	6.686	6.686	6.686	5.986	5.986	9.304	9.304	8.450	9.861	15.255	15.255	14.973
Water flow	l/s	1.534	1.534	1.948	2.170	2.502	2.906	3.331	3.866	4.432	5.360	5.870	6.740
Diameter of hydrualic connections	II	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Water side pressure drop	kPa	33	33	53	60	37	51	49	45	61	51	40	43
Available pressure head	kPa	118	118	94	84	104	130	126	123	99	127	133	121
Water content escluding optionals	dm ³	3	3	3	3	3	4	4	4	4	5	5	5
Expansion tank	dm ³	5	5	5	5	5	5	5	5	5	8	8	8
Buffer tank	dm ³	30	30	30	30	30	50	50	50	50	125	125	125
Height	mm	1225	1225	1225	1225	1225	1275	1275	1275	1275	1300	1300	1300
Length	mm	1220	1220	1220	1220	1220	1565	1565	1565	1565	1665	1665	1665
Depth	mm	550	550	550	550	550	601	601	601	601	950	950	950
Sound power level	dB(A)	69	69	69	69	71	71	71	71	73	77	77	77
Sound pressure level	dB(A)	41	41	41	41	43	43	43	43	45	49	49	49
Transport weight *	kg	202	202	202	209	209	260	260	280	285	310	330	330
Operating weight *	kg	227,5	227,5	227,5	234,5	234,5	306,3	306,3	327,3	332,3	432,0	453,0	453,0

^{*} Weights referred to version including pump and buffer tank
Cooling capacity: outdoor air temperature 35°C, water temperature 12°C / 7°C
Sound pressure level measured at a distance of 10 m and a height of 1.5 m above the ground in a free field (fan side).



		Tecl	nnical d	ata hea	t pump	s MCE							
MCE-H		009M	009	011	013	015	018	019	023	026	031	034	039
Power supply	V-ph-Hz	230-1-50						400-3N-50)				
Cooling capacity	kW	8,74	8,74	11,10	12,36	14,26	16,56	18,98	22,03	25,25	30,54	33,45	38,40
Total power input in cooling mode	kW	3,36	3,36	4,37	4,41	5,35	6,57	7,42	8,54	9,40	10,71	12,19	13,38
EER		2,60	2,60	2,54	2,80	2,67	2,52	2,56	2,58	2,69	2,85	2,74	2,87
ESEER		3,09	3,09	3,09	3,38	3,27	3,07	2,99	3,03	3,05	3,31	3,26	3,40
Total power input including pump	kW	3,73	3,73	4,74	4,78	5,72	6,94	7,79	8,91	9,77	11,26	12,74	13,93
Heating capacity	kW	10,52	10,52	13,19	14,50	16,69	19,67	22,43	26,24	29,47	35,15	38,62	44,05
Total power input in heating mode	kW	3,64	3,64	4,46	4,60	5,50	6,68	7,23	8,32	9,01	10,69	11,93	13,50
COP		2,89	2,89	2,96	3,15	3,04	2,95	3,10	3,16	3,27	3,29	3,24	3,26
Total power input in heating mode including pump	kW	4,01	4,01	4,83	4,97	5,87	7,05	7,60	8,69	9,38	11,24	12,48	14,05
Maximum power input	kW	5,1	7,2	8,6	8,9	10,5	12,5	13,6	15,7	17,4	19,1	22,1	22,7
Maximum current absorption	Α	26,3	14,4	16,9	17,4	20,0	24,3	26,2	29,7	32,6	34,6	39,6	40,6
Starting absorbed current	Α	99	50	65	65	68	75	104	104	132	166	161	163
n° of scroll compressor / circuits		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
Refrigerant charge	kg	2,3	2,3	2,3	3,0	3,1	3,1	3,7	4,8	5,0	6,4	6,6	9,1
Low/high pressure switch	bar	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42
n° of axial fan		2	2	2	2	2	4	4	4	4	1	1	1
Air flow	m³/h	6.686	6.686	6.686	5.986	5.986	9.304	9.304	8.450	9.861	15.255	15.255	14.973
Water flow in cooling mode	l/s	1.534	1.534	1.948	2.170	2.502	2.906	3.331	3.866	4.432	5.360	5.870	6.740
Water flow in heat pump	l/s	1.809	1.809	2.269	2.495	2.871	3.383	3.859	4.514	5.069	6.045	6.643	7.576
Diameter of hydrualic connections	"	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Water pressure drop (cooling)	kPa	33	33	53	60	37	51	49	45	61	51	40	43
Water pressure drop (heating)	kPa	44	44	71	83	49	69	66	61	81	63	50	54
Available pressure head (cooling)	kPa	118	118	94	84	104	130	126	123	99	127	133	121
Available pressure head (heating)	kPa	148	148	144	141	138	174	168	159	151	171	164	154
Water content escluding optionals	dm ³	3	3	3	3	3	4	4	4	4	5	5	5
Expansion tank	dm ³	5	5	5	5	5	5	5	5	5	8	8	8
Buffer tank	dm ³	30	30	30	30	30	50	50	50	50	125	125	125
Height	mm	1225	1225	1225	1225	1225	1275	1275	1275	1275	1300	1300	1300
Length	mm	1220	1220	1220	1220	1220	1565	1565	1565	1565	1665	1665	1665
Depth	mm	550	550	550	550	550	601	601	601	601	950	950	950
Sound power level	dB(A)	69	69	69	69	71	71	71	71	73	77	77	77
Sound pressure level	dB(A)	41	41	41	41	43	43	43	43	45	49	49	49
Transport weight *	kg	212	212	212	219	220	273	273	295	300	330	350	350
Operating weight *	kg	237,5	237,5	237,5	244,5	245,5	319,3	319,3	342,3	347,3	452	473	473

Heating capacity: outdoor air temperature 7°C dry bulb and 6.2°C wet bulb, water temperature 40°C/45°C Sound pressure level measured at a distance of 10 m and a height of 1.5 m above the ground in a free field (fan side).



^{*} Weights referred to version including pump and buffer tank

Cooling capacity: outdoor air temperature 35°C, water temperature 12°C / 7°C
 Heating capacity: outdoor air temperature 7°C dry bulb and 6.2°C wet bulb, wa



PERFORMA: EFFICIENCY OVER THE LIMITS

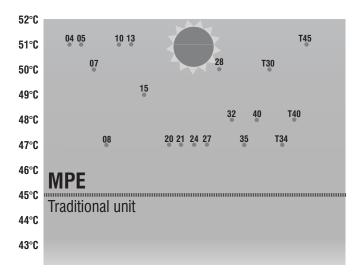
- > R410A
- > DEDICATED FINNED PACK COIL
- > EXTREMELY LOW SOUND LEVEL
- > HIGH EFFICIENCY
- > WIDE OPERATION RANGE
- > TANDEM EXECUTION VERSION
- > AUTO ADAPTIVE SET POINT
- > OPERATION WITH LOW WATER CONTENT (BUFFER TANK NOT NEEDED)
- > SMART DEFROST SYSTEM

PERFORMA MPE water chiller and air/water hea pumps are designed for refrigeratori e le pompe di calore della serie **PERFORMA (MPE)** sono progettati per l'installazione all'esterno, in impieghi residenziali e commerciali.

The use of R410A ensure high performance ond low power consuption. The range is made of 21 models for cooling-only and heat pump operation with capacity ranging from 4 to 66 kW (cooling mode) and with capacity ranging from 5 a 70 kW (heating mode).

EXTENDED WORKING LIMITS

Dedicated and oversized finned pack heat exchangers with 8mm pipe grant better heat exchange a low noise operation of the fans and enlarge the working temperature in summer season up to 51°C of outdoor temperature with an average EER of 2,95 and an average COP of 3,25 corresponding to Eurovent A Class of energy efficiency.



ALWAYS EFFICIENT

It is proved that the effective thermal load of the air conditioning plant on the 90% of the time, 60% lower than the nominal load.

MPET version, with 2 compressors on the same refrigerant circuit, offers high efficiency at partial load (ESEER > 4) and ensure the operation even at high temperature in the cooling operation.

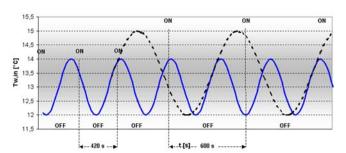
In such condition the microprocessor control switch off one compressor doubling the condensing surface on which one compressor operates Axial fans coupled to 6/8 poles motor and controlled by the condensation control grants low noise operation and optimal operation in each working condition.



AUTO ADAPTIVE

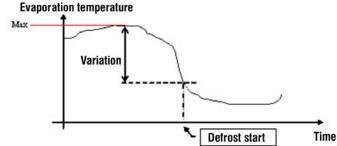
The electronic control panel automatically adjusts the unit set point as a function of the outdoor temperature to reduce power consuption and enlarge the range of working temperature .

The operation in systems with low water content now is possible even without the buffer tank thanks to the microprocessor control logic that reduce the compressor start up numbers and increase its working time.



SMART DEFROST SYSTEM

The exclusive Smart Defrost System (available with advanced microprocessor controller) is able to detect the heat exchange reduction due to ice formation on finned pack coil and to adapt the defrost cicle time.





CONSTRUCTIVE FEATURES

STRUCTURES

Structure and base built from galvanised sheet steel coated with corrosion-proof paint, RAL 9002 colour.

All bolts and screws and fastening devices are made of non-oxidisable materials, or carbon steel that has undergone surface-passivating treatments.

The compressor compartment is completely sealed and may be accessed on 3 sides thanks to easy-to-remove panels that greatly simplify maintenance and inspection.

The compressor compartment can be acoustically insulated on request in order to reduce the sound emission of the unit.

BUILT-IN HYDRONIC KIT

 High performance pump completely (body and rotor) made of stainless steel suitable ready to operate with glycol mix up to 35%.
 The pump motor is complete with internal thermal protection.

The pump is located in the compressor comparment and is easely reachable thanks to the openable panels.

The water pump is cooled by fresh air through a suitable grille.

- Expansion vessel.
- Safety valve.
- Filling valve.
- Automatic air purge.
- Differential pressure switch and antifreeze thermostat with probe on leaving water side.
- Buffer tank dowstream to the evaporator, best solution to reduce the chilled water variation due to the compressor ON/OFF operation.
- The Mechanical Y Filter is standard for all the versions to protect the plate evaporator.

REFRIGERANT CIRCUIT

- Scroll compressor (rotary up to 7 kW).
- Heat exchanger with stainless steel braze-welded plates optimised for type of plate and distribution for R410A.
- Finned block condenser coil with 8 mm copper pipping and aluminium fins, characterized by large dimensions.
- Mechanical drier filter.
- Refrigerant sight glass with humidity indicator.
- Thermostatic valve with external equalization and integrated MOP function.
- 4-way reversing valve (heat pump only).
- Check valves (heat pump only).
- Liquid receiver (heat pump only).
- High and low pressure switches.
- Safety valve.
- Schrader valves for checks and/or maintenance.
- Refrigerant manometers (options).

FAN MOTOR ASSEMBLY

Fan of axial type with airfoil shapes blades provided with protection grille and housed in a nozzle with special shape that icrease its performance. Fans are housed in nozzles with special shape to increase performance. Fans are directly coupled with low speed (6/8 poles) motors, protected with a thermal cutout.

Fan motor assembly is connected to the unit through rubber vibration dampers and its supported by a deidicated frame.

The use of finned pack coils with 8mm diameter copper pipe reduce the pressur drop on air side decreasing the sound level.

The condensation control (on pressure base) adjust automatically the fan speed, reducing the noise emission of the unit in the night operation and when the unit runs at partial loads.

FINNED PACK

Finned pack heat exchangers with 8mm diameter copper tube, characterised by a large surfacce and specially designed to speed up the defrost cycle and to maximaze the integrate capacity of the unit.

ELECTRIC BOX

The electric box is built and wired according to the EEC 73/23 (LVD), to the 89/336 (EMCD) and related standards. Built with steel panels is protected by the unit's panels.

MICROPROCESSOR CONTROL

The control panel enables the complete control of MPE unit and can be easely accessed through a polycarbonate flap with IP 65 protection class.



The controller autoadaptive function allowed the unit operartion with low water content avoiding the use of the buffer tank.

The outdoor temperature measure allows to adjust atomatically the unit set point to the real thermoal load in cooling operation and to keep the unit operate even at the most critical condition in winter time.

The controller is complete with MODBUS for an immediate conneted to ERGO network.

Main functions:

- Control of the entering water temperature.
- Defrosting management (MPE-H)
- fan speed control on pressure base (opzionale)
- Complete alarm management
- Automatic set point adjustment depending on the outdoor air tenmperature
- Can be conneted to an RS485 serial line (optional) for supervision/ teleassisitance operation
- A remote terminal that reproduces the control functions is available as optional (not compatible with ERGO).

Controlled devices:

- Compressor
- Fans
- 4-way reversing valve (MPE-H)
- Water pump
- Antifreeze kit (optional)
- Alarm relay

Advanced controller available on request to carry out the following functions:

- LAN up to 4 units
- Smart Defrost System

AVAILABLE OPTIONS

Built in hydronic kit

Condensation control for low ambient temperature operation

Compressor compartment insulation

Refrigerant gauges

Antifreeze kit

Electronic expansion valve

Partial heat recovery system 25% complete with on/off contact for circulation pump (not supplied)

Special treatment on finned coil (copper/copper, cataphoresysl blygold) Remote control panels

Dampers

Condensing coil protection grille



How to place an order

MPE water chillers and heat punmps can be configured in order to meet many possible installation requirements.

Code

	Commercial name of the series
MPE	
	Model
004	
005	
007	Give information on the cooling capacity of the standard model
800	
010	
013	
015	
018	
020	
024	
027	
028	
032	
035	
040	
T30	
T34	
T40	
T45	
	Operation
C	Cooling only
<u>H</u>	Heat pump
	Power supply
0	400V 3N 50 Hz
M	230V - 1 - 50Hz
2	400V 3N 50 Hz + magnetic breaker

230V - 1 - 50Hz + magnetic breaker

Options and unit configuration

13 digits which customise the unit complying with the customer's requirements

Digit	Name	Description
	Expans	ion valve
	0	Thermostatic
	A	Electronic
	Waterp	oump
	0	Not present
	1	Pump, ex. vessel, water charge valve
	2	Double Pump, ex. vessel, water charge valve
	BufferT	ank
	0	Not present
	S	Present
	Heat re	covery
	0	Not present
	D	Partial (25%) with auxiliary contact for pump (cooling only
		models)
	Conden	sation control
	0	Not present
	C	With modulating air flow
	Antifre	eze kit
	0	Not present
	E	Present on standard unit
	Р	Present, unit with pump and vessel
	S	Present, unit with pump, vessel and tank
	Acousti	cinsulation
	0	Not present
	1	Sound proofing insulation for compressor housing
	Refrige	rant circuit accessories
	0	Not present
	M	Refrigerant gauges
		control panel
	0	Not present
	2	RS485 port (Modbus + Carel protocol)
	S	Simplified
	M	BASE microprocessor (modbus excluded)
	X	ADVANCED microprocessor
0	Special	·
U	0 0	
		Standard Copper / Copper
	R C	Cotonborosio
		Cataphoresis
1	B	Blygold
1		ion grille
	0	Not present
^	G	Present
2		essor option
	0	Not present
	1	Power factor correction capacitor
	2	Soft starter
	3	Power factor correction capacitor + soft starter
	4	Low temperature air/water
3	Control	
	1	Base microprocessor
	2	Advanced microprocessor

N.B. The choice of some options an prevent the choice of other options or oblige the selection of other digit.

Please contacfr Galletti for verification



			Tech	nical da	ta wate	r chiller	MPE						
MPE-C		004 M	005 M	007 M	008 M	008	010 M	010	013	015	018	020	024
Power supply	V - ph - Hz		230-1-50		230-1-50	400-3-50	230-1-50			400-	3-50		
Cooling capacity	kW	4,11	5,10	6,66	8,40	8,40	9,25	9,25	12,90	14,98	17,20	19,61	23,80
MPE CB Total power input	kW	1,35	1,70	2,26	3,35	3,09	3,22	3,22	4,16	5,16	6,32	7,12	8,10
EER		3,06	3,01	2,95	2,51	2,72	2,87	2,87	3,10	2,90	2,72	2,75	2,94
ESEER		3,54	3,39	3,32	2,98	3,36	3,38	3,38	3,69	3,53	3,30	3,21	3,42
MPE CP CS Total power input	kW	1,49	1,84	2,40	3,49	3,23	3,59	3,59	4,53	5,53	6,69	7,49	8,47
Maximum power input	kW	2,0	2,3	3,0	5,0	5,0	5,1	7,2	8,9	10,5	12,5	13,6	14,5
Maximum current absorption	Α	9,8	11,6	15,3	24,2	9,2	26,3	14,4	17,4	20,0	24,3	26,2	27,6
Starting absorbed current	Α	38	44	63	98	49	99	50	65	68	75	104	158
n° of scroll compressors / circuits							1,	/ 1		I			I
Refrigerant charge	kg	1,47	1,48	2,04	2,09	2,09	2,87	2,87	3,99	4,11	3,67	4,23	5,79
Low/high pressure switch	bar	,	,	*	,	,	2 /		,		,	,	
n° of axial fan		1	1	1	1	1	2	2	2	2	4	4	4
Air flow	m³/h	3.635	3.635	3.406	3.406	3.406	7.385	7.385	6.939	6.939	9.990	9.990	9.307
Water flow	I/s	707	877	1.146	1.445	1.445	1.591	1.591	2.219	2.577	2.958	3.373	4.094
Diameter of hydrualic connections	"	1	1	1	1	1	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Water side pressure drop	kPa	2	4	6	6	6	34	34	61	38	51	51	49
Available pressure head	kPa	63	61	57	53	53	116	116	83	103	129	123	116
Water content escluding optionals	dm ³	2	2	2	2	2	3	3	3	3	4	4	4
Expansion tank	dm ³	1	1	1	1	1	5	5	5	5	5	5	5
Buffer tank	dm ³	n.d.	n.d.	n.d.	n.d.	n.d.	30	30	30	30	50	50	50
Height	mm	758	758	758	758	758	1250	1250	1250	1250	1300	1300	1300
Length	mm	960	960	960	960	960	1220	1220	1220	1220	1565	1565	1565
Depth	mm	450	450	450	450	450	560	560	560	560	600	600	600
Sound power level	dB(A)	66	66	67	67	67	69	69	69	69	71	71	72
Sound pressure level	dB(A)	38	38	39	39	39	41	41	41	41	43	43	44
Transport weight *	kg	98	100	107	110	110	202	202	209	209	260	260	280
Operating weight *	kg	92.3	94.3	101,3	104.3	104,3	227,5	227,5	234.5	234,5	306,3	296,3	327,3
MPE-C	кg	027	028	032	035	040	054 **	066 **	204,0	T30	T34	T40	T45
Power supply										1			
II OWEI OUNDIV	V - ph - Hz				400-3-50						400-	3-50	
	V - ph - Hz kW	26.60	28.10	31.52		39.67	51.4	66.1		30	400- 34	-3-50 40	45
Cooling capacity MPE CB Total power input	kW	,	28,10 8.65	31,52 10.06	35,00	39,67 12.77	51,4 17.8				34	40	45 16
Cooling capacity MPE CB Total power input		9,33	8,65	10,06	35,00 11,51	12,77	17,8	24,1		10			16
Cooling capacity MPE CB Total power input EER	kW	9,33 2,85	8,65 3,25	10,06 3,13	35,00 11,51 3,04	12,77 3,11	17,8 3,04	24,1		10	34 13 3	40 14 3	16 3
Cooling capacity MPE CB Total power input EER ESEER	kW	9,33 2,85 3,36	8,65 3,25 3,77	10,06 3,13 3,63	35,00 11,51 3,04 3,61	12,77 3,11 3,68	17,8 3,04 3,60	24,1 2,74 3,30		10	34 13	40 14	16
Cooling capacity MPE CB Total power input EER	kW kW	9,33 2,85	8,65 3,25	10,06 3,13	35,00 11,51 3,04	12,77 3,11	17,8 3,04 3,60 18,7	24,1		10 3 4	34 13 3 4	40 14 3 4	16 3 4
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input	kW kW kW	9,33 2,85 3,36 9,70 18,0	8,65 3,25 3,77 9,20 18,3	10,06 3,13 3,63 10,61 18,9	35,00 11,51 3,04 3,61 12,06 21,8	12,77 3,11 3,68 13,32 22,4	17,8 3,04 3,60 18,7 22,7	24,1 2,74 3,30 25 23,3		10 3 4 11 21	34 13 3 4 13 24	40 14 3 4 14 27	16 3 4 17 31
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input Maximum current absorption	kW kW kW kW	9,33 2,85 3,36 9,70 18,0 33,6	8,65 3,25 3,77 9,20 18,3 35,5	10,06 3,13 3,63 10,61 18,9 36,5	35,00 11,51 3,04 3,61 12,06 21,8 41,5	12,77 3,11 3,68 13,32 22,4 42,5	17,8 3,04 3,60 18,7 22,7 45,2	24,1 2,74 3,30 25 23,3 46,2		10 3 4 11 21 40	34 13 3 4 13 24 46	40 14 3 4 14 27 50	16 3 4 17 31 57
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input Maximum current absorption Starting absorbed current	kW kW kW	9,33 2,85 3,36 9,70 18,0	8,65 3,25 3,77 9,20 18,3	10,06 3,13 3,63 10,61 18,9	35,00 11,51 3,04 3,61 12,06 21,8 41,5 161	12,77 3,11 3,68 13,32 22,4	17,8 3,04 3,60 18,7 22,7	24,1 2,74 3,30 25 23,3		10 3 4 11 21	34 13 3 4 13 24 46 96	40 14 3 4 14 27 50 127	16 3 4 17 31
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input Maximum current absorption Starting absorbed current n° of scroll compressors / circuits	kW kW kW kW A	9,33 2,85 3,36 9,70 18,0 33,6 132	8,65 3,25 3,77 9,20 18,3 35,5 133	10,06 3,13 3,63 10,61 18,9 36,5 166	35,00 11,51 3,04 3,61 12,06 21,8 41,5 161 1 / 1	12,77 3,11 3,68 13,32 22,4 42,5 163	17,8 3,04 3,60 18,7 22,7 45,2 163	24,1 2,74 3,30 25 23,3 46,2 165		10 3 4 11 21 40 86	34 13 3 4 13 24 46 96	40 14 3 4 14 27 50 127	16 3 4 17 31 57 130
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input Maximum current absorption Starting absorbed current n° of scroll compressors / circuits Refrigerant charge	kW kW kW kW A A	9,33 2,85 3,36 9,70 18,0 33,6	8,65 3,25 3,77 9,20 18,3 35,5	10,06 3,13 3,63 10,61 18,9 36,5	35,00 11,51 3,04 3,61 12,06 21,8 41,5 161 1 / 1 7,8	12,77 3,11 3,68 13,32 22,4 42,5	17,8 3,04 3,60 18,7 22,7 45,2	24,1 2,74 3,30 25 23,3 46,2		10 3 4 11 21 40	34 13 3 4 13 24 46 96 2 8	40 14 3 4 14 27 50 127 / 1	16 3 4 17 31 57
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input Maximum current absorption Starting absorbed current n° of scroll compressors / circuits Refrigerant charge Low/high pressure switch	kW kW kW kW A	9,33 2,85 3,36 9,70 18,0 33,6 132	8,65 3,25 3,77 9,20 18,3 35,5 133	10,06 3,13 3,63 10,61 18,9 36,5 166	35,00 11,51 3,04 3,61 12,06 21,8 41,5 161 1 / 1 7,8 2 / 42	12,77 3,11 3,68 13,32 22,4 42,5 163	17,8 3,04 3,60 18,7 22,7 45,2 163	24,1 2,74 3,30 25 23,3 46,2 165		10 3 4 11 21 40 86	34 13 3 4 13 24 46 96 2 8	40 14 3 4 14 27 50 127 / 1 11 42	16 3 4 17 31 57 130
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input Maximum current absorption Starting absorbed current n° of scroll compressors / circuits Refrigerant charge Low/high pressure switch n° of axial fan	kW kW kW kW A A A	9,33 2,85 3,36 9,70 18,0 33,6 132	8,65 3,25 3,77 9,20 18,3 35,5 133	10,06 3,13 3,63 10,61 18,9 36,5 166	35,00 11,51 3,04 3,61 12,06 21,8 41,5 161 1 / 1 7,8 2 / 42 2	12,77 3,11 3,68 13,32 22,4 42,5 163	17,8 3,04 3,60 18,7 22,7 45,2 163	24,1 2,74 3,30 25 23,3 46,2 165		10 3 4 11 21 40 86	34 13 3 4 13 24 46 96 2, 8	40 14 3 4 14 27 50 127 / 1 11 42	16 3 4 17 31 57 130
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input Maximum current absorption Starting absorbed current n° of scroll compressors / circuits Refrigerant charge Low/high pressure switch n° of axial fan Air flow	kW kW kW A A A bar m³/h	9,33 2,85 3,36 9,70 18,0 33,6 132 6,0	8,65 3,25 3,77 9,20 18,3 35,5 133 7,5	10,06 3,13 3,63 10,61 18,9 36,5 166 7,5	35,00 11,51 3,04 3,61 12,06 21,8 41,5 161 1 / 1 7,8 2 / 42 2 16,276	12,77 3,11 3,68 13,32 22,4 42,5 163 10,8	17,8 3,04 3,60 18,7 22,7 45,2 163 13,0	24,1 2,74 3,30 25 23,3 46,2 165 15,0		10 3 4 11 21 40 86 8 8	34 13 3 4 13 24 46 96 2 8 2 / 2 16276	40 14 3 4 14 27 50 127 / 1 11 42 2 15776	16 3 4 17 31 57 130 11 2 15776
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input Maximum current absorption Starting absorbed current n° of scroll compressors / circuits Refrigerant charge Low/high pressure switch n° of axial fan Air flow Water flow	kW kW kW A A A Bar bar m³/h l/s	9,33 2,85 3,36 9,70 18,0 33,6 132 6,0 4 9,307 4,575	8,65 3,25 3,77 9,20 18,3 35,5 133 7,5	10,06 3,13 3,63 10,61 18,9 36,5 166 7,5	35,00 11,51 3,04 3,61 12,06 21,8 41,5 161 1 / 1 7,8 2 / 42 2 16,276 6,021	12,77 3,11 3,68 13,32 22,4 42,5 163 10,8 2 15,776 6,823	17,8 3,04 3,60 18,7 22,7 45,2 163 13,0 2 20,000 9,305	24,1 2,74 3,30 25 23,3 46,2 165 15,0 2 20,000 11,376		10 3 4 11 21 40 86 8 2 16276 5160	34 13 3 4 13 24 46 96 2 / 8 2 / 2 16276 5857	40 14 3 4 14 27 50 127 / 1 11 42 2 15776 6806	16 3 4 17 31 57 130 11 2 15776 7663
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input Maximum current absorption Starting absorbed current n° of scroll compressors / circuits Refrigerant charge Low/high pressure switch n° of axial fan Air flow Water flow Diameter of hydrualic connections	kW kW kW A A A bar m³/h l/s "	9,33 2,85 3,36 9,70 18,0 33,6 132 6,0 4 9,307 4,575 1 1/4	8,65 3,25 3,77 9,20 18,3 35,5 133 7,5 2 16,276 4,833 1,1/4	10,06 3,13 3,63 10,61 18,9 36,5 166 7,5 2 16.276 5.421 1 1/4	35,00 11,51 3,04 3,61 12,06 21,8 41,5 161 1 / 1 7,8 2 / 42 2 16,276 6,021 1 1/4	12,77 3,11 3,68 13,32 22,4 42,5 163 10,8 2 15,776 6,823 1,1/4	17,8 3,04 3,60 18,7 22,7 45,2 163 13,0 2 20,000 9,305 1 1/4	24,1 2,74 3,30 25 23,3 46,2 165 15,0 2 20,000 11,376 1 1/4		10 3 4 11 21 40 86 8 2 16276 5160 1	34 13 3 4 13 24 46 96 2 8 2 / 16276 5857	40 14 3 4 14 27 50 127 / 1 11 42 2 15776 6806 1	16 3 4 17 31 57 130 11 2 15776 7663 1
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input Maximum current absorption Starting absorbed current n° of scroll compressors / circuits Refrigerant charge Low/high pressure switch n° of axial fan Air flow Water flow Diameter of hydrualic connections Water side pressure drop	kW kW kW A A A B kg bar I/s " KPa	9,33 2,85 3,36 9,70 18,0 33,6 132 6,0 4 9,307 4,575 1 1/4	8,65 3,25 3,77 9,20 18,3 35,5 133 7,5 2 16,276 4,833 1,1/4	10,06 3,13 3,63 10,61 18,9 36,5 166 7,5 2 16,276 5,421 1 1/4 51	35,00 11,51 3,04 3,61 12,06 21,8 41,5 161 1 / 1 7,8 2 / 42 2 16,276 6,021 1 1/4	12,77 3,11 3,68 13,32 22,4 42,5 163 10,8 2 15,776 6,823 1 1/4 43	17,8 3,04 3,60 18,7 22,7 45,2 163 13,0 2 20,000 9,305 1 1/4 60	24,1 2,74 3,30 25 23,3 46,2 165 15,0 2 20,000 11,376 1 1/4 60		10 3 4 11 21 40 86 8 2 16276 5160 1 30	34 13 3 4 13 24 46 96 2 2 16276 5857 1 38	40 14 3 4 14 27 50 127 / 1 11 42 2 15776 6806 1 45	16 3 4 17 31 57 130 11 2 15776 7663 1 57
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input Maximum current absorption Starting absorbed current n° of scroll compressors / circuits Refrigerant charge Low/high pressure switch n° of axial fan Air flow Water flow Diameter of hydrualic connections Water side pressure drop Available pressure head	kW kW kW A A A B kg bar M³/h I/s H kPa kPa	9,33 2,85 3,36 9,70 18,0 33,6 132 6,0 4 9,307 4,575 1 1/4 34 124	8,65 3,25 3,77 9,20 18,3 35,5 133 7,5 2 16,276 4,833 11/4 40 143	10,06 3,13 3,63 10,61 18,9 36,5 166 7,5 2 16,276 5,421 1 1/4 51 126	35,00 11,51 3,04 3,61 12,06 21,8 41,5 161 1 / 1 7,8 2 / 42 2 16,276 6,021 1 1/4 41 130	12,77 3,11 3,68 13,32 22,4 42,5 163 10,8 2 15,776 6,823 11/4 43 119	17,8 3,04 3,60 18,7 22,7 45,2 163 13,0 2 20,000 9,305 11/4 60 110	24,1 2,74 3,30 25 23,3 46,2 165 15,0 2 20,000 11,376 1 1/4 60 95		10 3 4 11 21 40 86 8 2 16276 5160 1 30 150	34 13 3 4 13 24 46 96 2 8 2 16276 5857 1 38 134	40 14 3 4 14 27 50 127 / 1 11 42 2 15776 6806 1 45	16 3 4 17 31 57 130 11 2 15776 7663 1 57 97
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input Maximum current absorption Starting absorbed current n° of scroll compressors / circuits Refrigerant charge Low/high pressure switch n° of axial fan Air flow Water flow Diameter of hydrualic connections Water side pressure drop Available pressure head Water content escluding optionals	kW kW kW A A A B kg bar m³/h l/s " kPa kPa dm³	9,33 2,85 3,36 9,70 18,0 33,6 132 6,0 4 9,307 4,575 1,1/4 34 124 4	8,65 3,25 3,77 9,20 18,3 35,5 133 7,5 2 16,276 4,833 1,1/4 40 143 6	10,06 3,13 3,63 10,61 18,9 36,5 166 7,5 2 16,276 5,421 11/4 51 126 6	35,00 11,51 3,04 3,61 12,06 21,8 41,5 161 1 / 1 7,8 2 / 42 2 16,276 6,021 1 1/4 41 130 6	12,77 3,11 3,68 13,32 22,4 42,5 163 10,8 2 15,776 6,823 11/4 43 119 6	17,8 3,04 3,60 18,7 22,7 45,2 163 13,0 2 20,000 9,305 11/4 60 110 7	24,1 2,74 3,30 25 23,3 46,2 165 15,0 2 20,000 11,376 11/4 60 95 8		10 3 4 11 21 40 86 8 2 16276 5160 1 30 150 6	34 13 3 4 13 24 46 96 2 8 2 16276 5857 1 38 134 6	40 14 3 4 14 27 50 127 / 1 11 42 2 15776 6806 1 45 117 6	16 3 4 17 31 57 130 11 2 15776 7663 1 57 97 6
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input Maximum current absorption Starting absorbed current n° of scroll compressors / circuits Refrigerant charge Low/high pressure switch n° of axial fan Air flow Water flow Diameter of hydrualic connections Water side pressure drop Available pressure head Water content escluding optionals Expansion tank	kW kW kW A A A A B B B B B B B B B B B B B B B	9,33 2,85 3,36 9,70 18,0 33,6 132 6,0 4 9,307 4,575 11/4 34 124 4 5	8,65 3,25 3,77 9,20 18,3 35,5 133 7,5 2 16,276 4,833 11/4 40 143 6	10,06 3,13 3,63 10,61 18,9 36,5 166 7,5 2 16,276 5,421 1 1/4 51 126 6	35,00 11,51 3,04 3,61 12,06 21,8 41,5 161 1 / 1 7,8 2 / 42 2 16,276 6,021 1 1/4 41 130 6 8	12,77 3,11 3,68 13,32 22,4 42,5 163 10,8 2 15,776 6.823 1 1/4 43 119 6	17,8 3,04 3,60 18,7 22,7 45,2 163 13,0 2 20,000 9,305 11/4 60 110 7	24,1 2,74 3,30 25 23,3 46,2 165 15,0 2 20,000 11,376 1 1/4 60 95 8		10 3 4 11 21 40 86 8 2 16276 5160 1 30 150 6 8	34 13 3 4 13 24 46 96 2 8 2 16276 5857 1 38 134 6 8	40 14 3 4 14 27 50 127 / 1 11 42 2 15776 6806 1 45 117 6 8	16 3 4 17 31 57 130 11 2 15776 7663 1 57 97 6 8
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input Maximum current absorption Starting absorbed current n° of scroll compressors / circuits Refrigerant charge Low/high pressure switch n° of axial fan Air flow Water flow Diameter of hydrualic connections Water side pressure drop Available pressure head Water content escluding optionals Expansion tank Buffer tank	kW kW kW A A A B A B B B B B B B B B B B B B B	9,33 2,85 3,36 9,70 18,0 33,6 132 6,0 4 9,307 4.575 1.1/4 34 124 4 5	8,65 3,25 3,77 9,20 18,3 35,5 133 7,5 2 16,276 4,833 1,1/4 40 143 6 8 125	10,06 3,13 3,63 10,61 18,9 36,5 166 7,5 2 16,276 5,421 1,1/4 51 126 6 8	35,00 11,51 3,04 3,61 12,06 21,8 41,5 161 1 / 1 7,8 2 / 42 2 16,276 6,021 1 1/4 41 130 6 8 125	12,77 3,11 3,68 13,32 22,4 42,5 163 10,8 2 15,776 6.823 1 1/4 43 119 6 8 125	17,8 3,04 3,60 18,7 22,7 45,2 163 13,0 2 20,000 9,305 11/4 60 110 7 8 125	24,1 2,74 3,30 25 23,3 46,2 165 15,0 2 20,000 11,376 1 1/4 60 95 8 8 8		10 3 4 11 21 40 86 8 2 16276 5160 1 30 150 6 8 125	34 13 3 4 13 24 46 96 2 8 2 16276 5857 1 38 134 6 8	40 14 3 4 14 27 50 127 / 1 11 42 2 15776 6806 1 45 117 6 8 125	16 3 4 17 31 57 130 11 2 15776 7663 1 57 97 6 8 125
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input Maximum current absorption Starting absorbed current n° of scroll compressors / circuits Refrigerant charge Low/high pressure switch n° of axial fan Air flow Water flow Diameter of hydrualic connections Water side pressure drop Available pressure head Water content escluding optionals Expansion tank Buffer tank Height	kW kW kW A A A B kg bar B kPa kPa dm³ dm³ dm³ mm	9,33 2,85 3,36 9,70 18,0 33,6 132 6,0 4 9,307 4,575 1,1/4 34 124 4 5 50 1300	8,65 3,25 3,77 9,20 18,3 35,5 133 7,5 2 16,276 4,833 1,1/4 40 143 6 8 125 1485	10,06 3,13 3,63 10,61 18,9 36,5 166 7,5 2 16,276 5,421 1 1/4 51 126 6 8 125 1485	35,00 11,51 3,04 3,61 12,06 21,8 41,5 161 1 / 1 7,8 2 / 42 2 16,276 6,021 1 1/4 41 130 6 8 125 1485	12,77 3,11 3,68 13,32 22,4 42,5 163 10,8 2 15,776 6,823 1 1/4 43 119 6 8 125 1485	17,8 3,04 3,60 18,7 22,7 45,2 163 13,0 2 20,000 9,305 11/4 60 110 7 8 125 1,485	24,1 2,74 3,30 25 23,3 46,2 165 15,0 2 20,000 11,376 1 1/4 60 95 8 8 125 1,485		10 3 4 11 21 40 86 8 2 16276 5160 1 30 150 6 8 125 1485	34 13 3 4 13 24 46 96 2 8 2 / 2 16276 5857 1 38 134 6 8 125 1485	40 14 3 4 14 27 50 127 / 1 11 42 2 15776 6806 1 45 117 6 8 125 1485	16 3 4 17 31 57 130 11 2 15776 7663 1 57 97 6 8 125 1485
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input Maximum current absorption Starting absorbed current n° of scroll compressors / circuits Refrigerant charge Low/high pressure switch n° of axial fan Air flow Water flow Diameter of hydrualic connections Water side pressure drop Available pressure head Water content escluding optionals Expansion tank Buffer tank Height Length	kW kW kW A A A Barran Market KPa kPa dm3 dm3 dm3 mm mm	9,33 2,85 3,36 9,70 18,0 33,6 132 6,0 4 9,307 4,575 1,1/4 34 1,24 4 5 50 1300 1565	8,65 3,25 3,77 9,20 18,3 35,5 133 7,5 2 16,276 4,833 1,1/4 40 143 6 8 125 1485 1990	10,06 3,13 3,63 10,61 18,9 36,5 166 7,5 2 16,276 5,421 1 1/4 51 126 6 8 125 1485 1990	35,00 11,51 3,04 3,61 12,06 21,8 41,5 161 1 / 1 7,8 2 / 42 2 16,276 6,021 1 1/4 41 130 6 8 125 1485 1990	12,77 3,11 3,68 13,32 22,4 42,5 163 10,8 2 15,776 6,823 1,1/4 43 119 6 8 125 1485 1990	17,8 3,04 3,60 18,7 22,7 45,2 163 13,0 2 20,000 9,305 11/4 60 110 7 8 125 1,485 1,990	24,1 2,74 3,30 25 23,3 46,2 165 15,0 2 20,000 11,376 1 1/4 60 95 8 8 125 1,485 1,990		10 3 4 11 21 40 86 8 2 16276 5160 1 30 150 6 8 125 1485 1990	34 13 3 4 13 24 46 96 2 8 2 / 2 16276 5857 1 38 134 6 8 125 1485 1990	40 14 3 4 14 27 50 127 / 1 11 42 2 15776 6806 1 45 117 6 8 125 1485	16 3 4 17 31 57 130 11 2 15776 7663 1 57 97 6 8 125 1485 1990
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input Maximum current absorption Starting absorbed current n° of scroll compressors / circuits Refrigerant charge Low/high pressure switch n° of axial fan Air flow Water flow Diameter of hydrualic connections Water side pressure drop Available pressure head Water content escluding optionals Expansion tank Buffer tank Height Length Depth	kW kW kW A A A Baran Market Ma	9,33 2,85 3,36 9,70 18,0 33,6 132 6,0 4 9,307 4,575 1 1/4 34 124 4 5 5 0 1300 1565 600	8,65 3,25 3,77 9,20 18,3 35,5 133 7,5 2 16,276 4,833 1,1/4 40 143 6 8 125 1485 1990 950	10,06 3,13 3,63 10,61 18,9 36,5 166 7,5 2 16,276 5,421 1 1/4 51 126 6 8 125 1485 1990 950	35,00 11,51 3,04 3,61 12,06 21,8 41,5 161 1 / 1 7,8 2 / 42 2 16,276 6,021 1 1/4 41 130 6 8 125 1485 1990 950	12,77 3,11 3,68 13,32 22,4 42,5 163 10,8 2 15,776 6,823 1,1/4 43 119 6 8 125 1485 1990 950	17,8 3,04 3,60 18,7 22,7 45,2 163 13,0 2 20,000 9,305 11/4 60 110 7 8 125 1,485 1,990 950	24,1 2,74 3,30 25 23,3 46,2 165 15,0 2 20,000 11,376 11/4 60 95 8 8 125 1,485 1,990 950		10 3 4 11 21 40 86 8 2 16276 5160 1 30 150 6 8 125 1485 1990 950	34 13 3 4 13 24 46 96 2 8 2/ 16276 5857 1 38 134 6 8 125 1485 1990 950	40 14 3 4 14 27 50 127 / 1 11 42 2 15776 6806 1 45 117 6 8 125 1485 1990 950	16 3 4 17 31 57 130 11 2 15776 7663 1 57 97 6 8 125 1485 1990 950
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input Maximum current absorption Starting absorbed current n° of scroll compressors / circuits Refrigerant charge Low/high pressure switch n° of axial fan Air flow Water flow Diameter of hydrualic connections Water side pressure drop Available pressure head Water content escluding optionals Expansion tank Buffer tank Height Length Depth Sound power level	kW kW kW A A A A B kg bar B kPa kPa dm³ dm³ dm³ dm³ dm³ dm³ dm dB(A)	9,33 2,85 3,36 9,70 18,0 33,6 132 6,0 4 9,307 4,575 1 1/4 34 124 4 5 50 1300 1565 600 72	8,65 3,25 3,77 9,20 18,3 35,5 133 7,5 2 16,276 4,833 1,1/4 40 143 6 8 125 1485 1990 950 73	10,06 3,13 3,63 10,61 18,9 36,5 166 7,5 2 16,276 5,421 1 1/4 51 126 6 8 125 1485 1990 950 73	35,00 11,51 3,04 3,61 12,06 21,8 41,5 161 1 / 1 7,8 2 / 42 2 16.276 6.021 1 1/4 41 130 6 8 125 1485 1990 950 73	12,77 3,11 3,68 13,32 22,4 42,5 163 10,8 2 15,776 6.823 1 1/4 43 119 6 8 125 1485 1990 950 75	17,8 3,04 3,60 18,7 22,7 45,2 163 13,0 2 20,000 9,305 11/4 60 110 7 8 125 1,485 1,990 950 78	24,1 2,74 3,30 25 23,3 46,2 165 15,0 2 20,000 11,376 11/4 60 95 8 8 125 1,485 1,990 950 78		10 3 4 11 21 40 86 8 2 16276 5160 1 30 150 6 8 125 1485 1990 950 72	34 13 3 4 13 24 46 96 2 8 2 16276 5857 1 38 134 6 8 125 1485 1990 950 72	40 14 3 4 14 27 50 127 / 1 11 42 2 15776 6806 1 45 117 6 8 125 1485 1990 950 72	16 3 4 17 31 57 130 11 2 15776 7663 1 57 97 6 8 125 1485 1990 950 72
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input Maximum current absorption Starting absorbed current n° of scroll compressors / circuits Refrigerant charge Low/high pressure switch n° of axial fan Air flow Water flow Diameter of hydrualic connections Water side pressure drop Available pressure head Water content escluding optionals Expansion tank Buffer tank Height Length Depth Sound power level Sound pressure level	kW kW kW A A A A B A B B B B B B B B B B B B B	9,33 2,85 3,36 9,70 18,0 33,6 132 6,0 4 9,307 4,575 11/4 34 124 4 5 50 1300 1565 600 72 44	8,65 3,25 3,77 9,20 18,3 35,5 133 7,5 2 16,276 4,833 1 1/4 40 143 6 8 125 1485 1990 950 73 45	10,06 3,13 3,63 10,61 18,9 36,5 166 7,5 2 16,276 5,421 1 1/4 51 126 6 8 125 1485 1990 950 73 45	35,00 11,51 3,04 3,61 12,06 21,8 41,5 161 1 / 1 7,8 2 / 42 2 16,276 6,021 1 1/4 41 130 6 8 125 1485 1990 950 73 45	12,77 3,11 3,68 13,32 22,4 42,5 163 10,8 2 15,776 6.823 1 1/4 43 119 6 8 125 1485 1990 950 75 47	17,8 3,04 3,60 18,7 22,7 45,2 163 13,0 2 20,000 9,305 11/4 60 110 7 8 125 1,485 1,990 950 78 50	24,1 2,74 3,30 25 23,3 46,2 165 15,0 2 20,000 11,376 1 1/4 60 95 8 8 125 1,485 1,990 950 78 50		10 3 4 11 21 40 86 8 2 16276 5160 1 30 150 6 8 125 1485 1990 950 72 44	34 13 3 4 13 24 46 96 2 8 2 16276 5857 1 38 134 6 8 125 1485 1990 950 72 44	40 14 3 4 14 27 50 127 / 1 11 42 2 15776 6806 1 45 117 6 8 125 1485 1990 950 72 44	16 3 4 17 31 57 130 11 2 15776 7663 1 57 97 6 8 125 1485 1990 950 72 44
Cooling capacity MPE CB Total power input EER ESEER MPE CP CS Total power input Maximum power input Maximum current absorption Starting absorbed current n° of scroll compressors / circuits Refrigerant charge Low/high pressure switch n° of axial fan Air flow Water flow Diameter of hydrualic connections Water side pressure drop Available pressure head Water content escluding optionals Expansion tank Buffer tank Height Length Depth Sound power level	kW kW kW A A A A B kg bar B kPa kPa dm³ dm³ dm³ dm³ dm³ dm³ dm dB(A)	9,33 2,85 3,36 9,70 18,0 33,6 132 6,0 4 9,307 4,575 1 1/4 34 124 4 5 50 1300 1565 600 72	8,65 3,25 3,77 9,20 18,3 35,5 133 7,5 2 16,276 4,833 1,1/4 40 143 6 8 125 1485 1990 950 73	10,06 3,13 3,63 10,61 18,9 36,5 166 7,5 2 16,276 5,421 1 1/4 51 126 6 8 125 1485 1990 950 73	35,00 11,51 3,04 3,61 12,06 21,8 41,5 161 1 / 1 7,8 2 / 42 2 16.276 6.021 1 1/4 41 130 6 8 125 1485 1990 950 73	12,77 3,11 3,68 13,32 22,4 42,5 163 10,8 2 15,776 6.823 1 1/4 43 119 6 8 125 1485 1990 950 75	17,8 3,04 3,60 18,7 22,7 45,2 163 13,0 2 20,000 9,305 11/4 60 110 7 8 125 1,485 1,990 950 78	24,1 2,74 3,30 25 23,3 46,2 165 15,0 2 20,000 11,376 11/4 60 95 8 8 125 1,485 1,990 950 78		10 3 4 11 21 40 86 8 2 16276 5160 1 30 150 6 8 125 1485 1990 950 72	34 13 3 4 13 24 46 96 2 8 2 16276 5857 1 38 134 6 8 125 1485 1990 950 72	40 14 3 4 14 27 50 127 / 1 11 42 2 15776 6806 1 45 117 6 8 125 1485 1990 950 72	16 3 4 17 31 57 130 11 2 15776 7663 1 57 97 6 8 125 1485 1990 950 72

^{*} Weights referred to version including pump and buffer tank

⁻ Sound pressure level measured at a distance of 10 m and a height of 1.5 m above the ground in a free field (fan side).



^{**} Preliminary data

⁻ Cooling capacity: outdoor air temperature 35°C, water temperature 12°C / 7°C

			Tech	nical d	ata hea	t pump	s MPE						
MPE-H		004 M	005 M	007 M	008 M	008	010 M	010	013	015	018	020	024
Power supply	V-ph-Hz		230-1-50		230-1-50	400-3-50	230-1-50			400	-3-50		
Cooling capacity	kW	4,03	5,00	6,53	8,23	8,23	9,07	9,07	12,64	14,68	16,86	19,22	23,32
MPE HB Cooling power input	kW	1,35	1,70	2,26	3,35	3,09	3,22	3,22	4,16	5,16	6,32	7,12	8,10
EER		2,99	2,95	2,89	2,46	2,67	2,82	2,82	3,04	2,85	2,67	2,70	2,88
ESEER		3,47	3,32	3,26	2,92	3,29	3,31	3,31	3,62	3,46	3,23	3,15	3,35
MPE HP - HS Cooling power input	kW	1,49	1,84	2,40	3,49	3,23	3,59	3,59	4,53	5,53	6,69	7,49	8,47
Heating capacity	kW	4,72	5,86	7,77	10,21	9,95	10,87	10,87	15,09	17,60	20,03	22,96	27,15
MPE HB Heating power input	kW	1,46	1,81	2,41	3,59	3,25	3,62	3,62	4,70	5,49	6,63	7,16	8,11
COP		3,24	3,25	3,23	2,85	3,07	3,00	3,00	3,21	3,21	3,02	3,21	3,35
MPE HP - HS Heating power input	kW	1,60	1,95	2,55	3,73	3,39	3,99	3,99	5,07	5,86	7,00	7,53	8,48
Maximum power input	kW	2,0	2,3	3,0	5,0	5,0	5,1	7,2	8,9	10,5	12,5	13,6	14,50
Maximum current absorption	Α	9,80	11,60	15,30	24,20	9,20	26,30	14,40	17,40	20,00	24,30	26,20	27,60
Starting absorbed current	Α	38	44	63	98	49	99	50	65	68	75	104	158
n° of scroll compressor / circuits				,	•		1,	/ 1	•	•		•	,
Refrigerant charge	kg	1,47	1,48	2,04	2,09	2,09	2,87	2,87	3,99	4,11	3,67	4,23	5,79
Low/high pressure switch	bar						2 /	42					
n° of axial fan		1	1	1	1	1	2	2	2	2	4	4	4
Air flow	m³/h	3635	3635	3406	3406	3406	7385	7385	6939	6939	9990	9990	9307
Water flow in cooling mode	l/s	707	877	1146	1445	1445	1591	1591	2219	2577	2958	3373	4094
Water flow in heat pump	l/s	811	1008	1337	1755	1711	1869	1869	2595	3027	3445	3949	4670
Diameter of hydrualic connections	"	1	1	1	1	1	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1,25
Water pressure drop (cooling)	kPa	2	4	6	6	6	34	34	61	38	51	51	49
Water pressure drop (heating)	kPa	3	4	8	8	8	45	45	83	51	69	69	62
Available pressure head (cooling)	kPa	63	61	57	53	53	116	116	83	103	129	123	116
Available pressure head (heating)	kPa	62	59	53	48	48	102	102	57	86	104	97	95
Water content escluding optionals	dm ³	2	2	2	2	2	3	3	3	3	4	4	4
Expansion tank	dm ³	1	1	1	1	1	5	5	5	5	5	5	5
Buffer tank	dm ³	n.d.	n.d.	n.d.	n.d.	n.d.	30	30	30	30	50	50	50
Height	mm	758	758	758	758	758	1250	1250	1250	1250	1300	1300	1300
Length	mm	960	960	960	960	960	1220	1220	1220	1220	1565	1565	1565
Depth	mm	450	450	450	450	450	560	560	560	560	600	600	600
Sound power level	dB(A)	66	66	67	67	67	69	69	69	69	71	71	72
Sound pressure level	dB(A)	38	38	39	39	39	41	41	41	41	43	43	44
Transport weight *	kg	103	105	111,7	115	115	212	212	219	220	273	273	295
Operating weight *	kg	97,3	99,3	106	109,3	109,3	237,5	237,5	244,5	245,5	319,3	309,3	342

Heating capacity: outdoor air temperature 7°C dry bulb and 6.2°C wet bulb, water temperature 40°C/45°C Sound pressure level measured at a distance of 10 m and a height of 1.5 m above the ground in a free field (fan side).



^{*} Weights referred to version including pump and buffer tank

Cooling capacity: outdoor air temperature 35°C, water temperature 12°C / 7°C
 Heating capacity: outdoor air temperature 7°C dry bulb and 6.2°C wet bulb, wa

PERFORMA water chillers and heat pumps MPE series

		1	echnic	al data	heat pu	mps M	PE						
MPE-H		027	028	032	035	040	054 **	066 **	T30	T34	T40	T45	
Power supply	V-ph-Hz				400-3-50					400-	3-50		
Cooling capacity	kW	26,07	27,54	30,89	34,30	38,88	52	62,80	29,40	33,37	38,78	43,66	
MPE HB Cooling power input	kW	9,33	8,65	10,06	11,51	12,77	17,8	24,1	10,43	12,59	13,64	16,38	
EER		2,79	3,18	3,07	2,98	3,04	2,92	2,6	2,82	2,65	2,84	2,67	
ESEER		3,29	3,70	3,56	3,54	3,61	3,5	3,2	4,09	4,03	4,06	3,96	
MPE HP - HS Cooling power input	kW	9,70	9,20	10,61	12,06	13,32	18,7	25	10,98	13,14	14,19	16,93	
Heating capacity	kW	29,98	31,37	35,58	39,28	45,17	60,8	75,30	34,51	39,41	46,49	52,72	
MPE HB Heating power input	kW	8,89	9,14	10,42	11,57	13,14	18,3	23,1	10,86	12,80	13,97	16,26	
COP		3,37	3,43	3,41	3,39	3,44	3,32	3,26	3,18	3,08	3,33	3,24	
MPE HP - HS Heating power input	kW	9,26	9,69	10,97	12,12	13,69	19,2	24,00	11,41	13,35	14,52	16,81	
Maximum power input	kW	18,0	18,3	18,9	21,8	22,4	22,7	23,3	20,9	24,4	26,6	30,8	
Maximum current absorption	Α	33,60	35,50	36,50	41,50	42,50	45,2	46,2	39,9	45,9	49,70	56,70	
Starting absorbed current	Α	132	133	166	161	163	163	165	86	96	127	130	
n° of scroll compressor / circuits					1 / 1		•	-		2 ,	/ 1		
Refrigerant charge	kg	6,0	7,5	7,5	7,8	10,8	13	16,0	7,8	7,8	10,9	10,9	
Low/high pressure switch	bar				2 / 42					2 / 42			
n° of axial fan		4	2	2	2	2	2	2	2	2	2	2	
Air flow	m³/h	9.307	16.276	16.276	16.276	15.776	20000	20000	16.276	16.276	15.776	15.776	
Water flow in cooling mode	l/s	4.575	4.833	5.421	6.021	6.823	8944	10802	5.160	5.857	6.806	7.663	
Water flow in heat pump	l/s	5.156	5.396	6.120	6.756	7.769	10456	12953	5.935	6.779	7.996	9.067	
Diameter of hydrualic connections	II .	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	
Water pressure drop (cooling)	kPa	34	40	51	41	43	60	60	30	38	45	57	
Water pressure drop (heating)	kPa	43	49	63	50	54	80	80	39	51	57	73	
Available pressure head (cooling)	kPa	124	143	126	130	119	112	99	150	134	117	97	
Available pressure head (heating)	kPa	107	128	107	113	99	80	61	133	112	93	67	
Water content escluding optionals	dm ³	4	6	6	6	6	7	8	6	6	6	6	
Expansion tank	dm ³	5	8	8	8	8	8	8	8	8	8	8	
Buffer tank	dm ³	50	125	125	125	125	125	125	125	125	125	125	
Height	mm	1300	1485	1485	1485	1485	1485	1485	1485	1485	1485	1485	
Length	mm	1565	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	
Depth	mm	600	950	950	950	950	950	950	950	950	950	950	
Sound power level	dB(A)	72	73	73	73	75	78	78	72	72	72	72	
Sound pressure level	dB(A)	44	45	45	45	47	50	50	44	44	44	44	
Transport weight *	kg	300	400	400	420	420	530	560	430	430	430	450	
Operating weight *	kg	347,3	522	522	543	543	650	680	552	552	553	573	

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^{*} Weights referred to version including pump and buffer tank

^{**} Preliminary data

Cooling capacity: outdoor air temperature 35°C, water temperature 12°C / 7°C
 Heating capacity: outdoor air temperature 7°C dry bulb and 6.2°C wet bulb, water temperature 40°C/45°C
 Sound pressure level measured at a distance of 10 m and a height of 1.5 m above the ground in a free field (fan side).

EXCELIA: HIGH EFFICIENCY 365 DAYS/YEAR

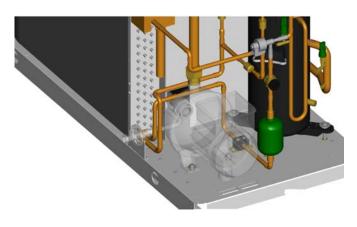
- > R410A
- > AIR OUTDOOR TEMPERATURE OPERATION UP TO -15°C
- > LOW NOISE
- > ELECTRONIC EXPANSION VALVE
- > CONDENSATION CONTROL
- > AUTO ADAPTIVE SET POINT
- > OPERATION WITH LOW WATER CONTENT (BUFFER TANK NOT NEEDED)
- > HYDRONIC PLUG&PLAY (PUMP AND VESSEL)
- > ANTIFREEZE KIT

Galletti has developed this product for the hot water production for space heating and service purpose more and more requested by independent houses with the aim to reduce the primary energy consumption and the running costs comparing to the conventional gas or electrical systems, thanks to the high efficiency:

COP average 3,3 (A Class of Eurovent Energetic Efficiency) EER average 3,23 (A Class of Eurovent Energetic Efficiency)

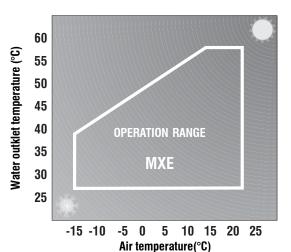
HEATING OPERATIONS OPTIMIZATION

- Counter flow heat exchanger on the heating model
- Finned coil with wide fin steps
- Desuperheating on the tubes present on the bottom side of the finned heat exchanger side
- Heating cable on the basement on the finned coil internal part
- Easy condensing draining



365 DAYS /YEAR WORKING OPERATIONS

The MXE heat pumps has been designed to work , in heating mode, with outdoor air temperature from -15° to $+~30^{\circ}\text{C}$, producing hot water up to 55°C , and in cooling mode with outdoor air temperature from -10°C to $+45^{\circ}\text{C}$



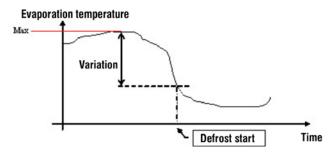


The electronic expansion valve and the condensing control (on pressure base) contribute to enlarge the working (operation) field.



SMART DEFROST SYSTEM

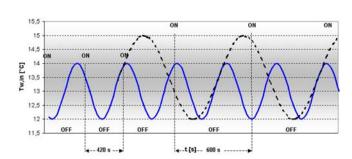
The exclusive Smart Defrost System (available with advanced microprocessor controller) is able to detect the heat exchange reduction due to ice formation on finned pack coil and to adapt the defrost cicle time.



AUTO ADAPTIVE

The electronic control panel automatically adjusts the unit set point as a function of the outdoor temperature to reduce power consuption and enlarge the range of working temperature .

The operation in systems with low water content now is possible even without the buffer tank thanks to the microprocessor control logic that reduce the compressor start up numbers and increase its working time.



∆Galletti

CONSTRUCTIVE FEATURES

STRUCTURE

Structure and base built from galvanised sheet steel coated with corrosion-proof paint, RAL 9002 colour.

All bolts and screws and fastening devices are made of non-oxidisable materials, or carbon steel that has undergone surface-passivating treatments.

The compressor compartment is completely sealed and may be accessed on 3 sides thanks to easy-to-remove panels that greatly simplify maintenance and inspection.

The compressor compartment can be acoustically insulated on request in order to reduce the sound emission of the unit.

BUILT-IN HYDRONIC KIT

 High performance pump completely (body and rotor) made of stainless steel suitable ready to operate with glycol mix up to 35%.
 The pump motor is complete with internal thermal protection.

The pump is located in the compressor comparment and is easely reachable thanks to the openable panels.

The water pump is cooled by fresh air through a suitable grille.

- Expansion vessel.
- Safety valve.
- Filling valve.
- Automatic air purge.
- Differential pressure switch and antifreeze thermostat with probe on leaving water side.
- Buffer tank dowstream to the evaporator, best solution to reduce the chilled water variation due to the compressor ON/OFF operation.
- The Mechanical Y Filter is standard for all the versions to protect the plate evaporator.

REFRIGERANT CIRCUIT

- Scroll compressor.
- Heat exchanger with stainless steel braze-welded plates optimised for type of plate and distribution for R410A.
- Finned block condenser coil with 8 mm copper pipping and aluminium fins, characterized by large dimensions.
- Mechanical drier filter.
- Refrigerant sight glass with humidity indicator.
- Thermostatic valve with external equalization and integrated MOP function.
- 4-way reversing valve.
- Check valves.
- Liquid receiver.
- High and low pressure switches.
- Safety valve.
- Schrader valves for checks and/or maintenance.
- Refrigerant manometers (options).

FAN MOTOR ASSEMBLY

Fan of axial type with airfoil shapes blades provided with protection grille and housed in a nozzle with special shape that icrease its performance. Fans are housed in nozzles with special shape to increase performance. Fans are directly coupled with low speed (6/8 poles) motors, protected with a thermal cutout.

Fan motor assembly is connected to the unit through rubber vibration dampers and its supported by a deidicated frame.

The use of finned pack coils with 8mm diameter copper pipe reduce the pressur drop on air side decreasing the sound level.

The condensation control (on pressure base) adjust automatically the fan speed, reducing the noise emission of the unit in the night operation and when the unit runs at partial loads.

FINNED PACK

Finned pack heat exchangers with 8mm diameter copper tube, characterised by a large surfacce and specially designed to speed up the defrost cycle and to maximaze the integrate capacity of the unit.

ELECTRIC BOX

The electric box is built and wired according to the EEC 73/23 (LVD), to the 89/336 (EMCD) and related standards. Built with steel panels is protected by the unit's panels.

MICROPROCESSOR CONTROL

The control panel enables the complete control of MCE unit and can be easely accessed through a polycarbonate flap with IP 65 protection class.



The controller autoadaptive function

allowed the unit operartion with low water content avoiding the use of the buffer tank.

The outdoor temperature measure allows to adjust atomatically the unit set point to the real thermoal load in cooling operation and to keep the unit operate even at the most critical condition in winter time.

The controller is complete with MODBUS for an immediate conneted to ERGO network.

Main functions:

- Control of the entering water temperature.
- Defrosting management
- fan speed control on pressure base
- Complete alarm management
- Automatic set point adjustment depending on the outdoor air tenmperature
- Can be conneted to an RS485 serial line (optional) for supervision/ teleassisitance operation
- A remote terminal that reproduces the control functions is available as optional (not compatible with ERGO).

Controlled devices:

- Compressor
- Fans
- 4-way reversing valve
- Water pump
- Antifreeze kit (optional)
- Alarm relay

Advanced controller available on request to carry out the following functions:

- LAN up to 4 units
- Smart Defrost System

AVAILABLE OPTIONS

Condensation control for low ambient temperature operation Refrigerant gauges

Partial heat recovery system 25% complete with on/off contact for circulation pump (not supplied)

Special treatment on finned coil (copper/copper, cataphoresysl blygold) Remote control panels

Dampers

Condensing coil protection grille



How to place an order

MXE heat punmps can be configured in order to meet many possible installation requirements.

Code

	Commercial name of the series
MXE	High efficiency air/water heat pump
	Model
009	
011	
014	Give information on the cooling capacity of the standard model
016	
019	
021	
	Operation
Н	Heat punp
	Powersupply
0	400V 3N 50 Hz
M	230V - 1 - 50Hz
2	400V 3N 50 Hz + magnetic breaker
4	230V - 1 - 50Hz + magnetic breaker

Options and unit configuration

13 digits which customise the unit complying with the customer's requirements

Digit	Name	Description
1	Expans	ion valve
	A	Electronic
2	Water	oump
	1	Pump, ex. vessel, water charge valve
3	Water t	ank
	0	Not present
	S	Present
4	Heatre	covery
	0	Not present
5	Conden	sation control
	C	Modulating with fan speed control
6	Antifre	eze kit
	Р	Present, unit with pump and vessel
	S	Present, unit with pump, vessel and tank
7		cinsulation
	1	Sound proofing insulation for compressor housing
8		rant circuit accessories
	0	Not present
	М	Refrigerant gauges
9		e control panel
	0	Not present
	2	RS485 port (Modbus + Carel protocol)
	S	Simplified
	M	BASE microprocessor (modbus excluded)
	X	ADVANCED microprocessor
10	Special	coil
	0	Standard
	R	Copper / Copper
	C	Cataphoresis
	В	Blygold
11	Protect	ion grille
	0	Not present
	G	Present
12	Compre	essor option
	0	Not present
	1	Power factor correction capacitor
	2	Soft starter
	3	Power factor correction capacitor + soft starter
	4	Low temperature air/water
13	Control	Panel
	1	Base microprocessor

N.B. The choice of some options an prevent the choice of other options or oblige the selection of other digit.

Please contacfr Galletti for verification



Technical data	a EXCEL	IA high e	fficiency	heat pui	nps MXE	series			
MXE		009 M	009	011 M	011	014	016	019	021
Power supply	V-ph-Hz	230-1-50	400-3-50	230-1-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50
Cooling capacity	kW	7,33	7,46	9,34	9,34	12,20	14,40	16,05	18,50
Total power input	kW	2,83	2,71	3,58	3,38	4,30	5,24	5,54	6,21
EER		2,98	3,19	2,91	3,10	3,10	2,96	3,10	3,17
ESEER		3,92	3,62	3,73	3,31	3,77	3,59	3,67	3,79
Heating capacity	kW	8,54	8,46	10,82	10,51	13,66	15,84	18,53	20,64
Total power input in heating mode	kW	3,15	2,99	3,72	3,47	4,47	5,24	5,71	6,31
COP		3,07	3,21	3,23	3,39	3,33	3,25	3,47	3,47
Maximum current input	Α	22,3	9,3	26,3	11,3	13,3	16,3	19,6	20,0
Starting absorbed current	Α	84	37	98	50	66	72	77	103
n° of scroll compressor / circuits		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
Low/high pressure switch	bar	0,7 / 42	0,7 / 42	0,7 / 42	0,7 / 42	0,7 / 42	0,7 / 42	0,7 / 42	0,7 / 42
n° of axial fan		2	2	2	2	2	2	4	4
Air flow	m³/h	7.705	7.705	7.705	7.705	7.355	7.355	12.679	12.679
Water flow in cooling mode	l/h	1.261	1.283	1.606	1.606	2.098	2.477	2.761	3.182
Water flow in heat pump	l/h	1.469	1.454	1.861	1.821	2.442	2.853	3.211	3.605
Diameter of hydrualic connections	II	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Available pressure head (cooling)	kPa	130	130	132	132	115	111	154	157
Available pressure head (heating)	kPa	118	118	121	125	103	98	143	148
Expansion tank	dm ³	5	5	5	5	5	5	5	5
Buffer tank	dm ³	30	30	30	30	30	30	30	50
Height	mm	1250	1250	1250	1250	1250	1250	1275	1275
Length	mm	1220	1220	1220	1220	1220	1220	1590	1590
Depth	mm	550	550	550	550	550	550	600	600
Sound power level	dB(A)	69	69	69	69	69	69	72	72
Sound pressure level	dB(A)	41	41	41	41	41	41	44	44
Transport weight *	kg	212	212	215	215	219	220	273	273
Operating weight *	kg	237,5	237,5	240,5	240,5	244,5	245,5	309,3	309,3

^{*} Weights referred to version including pump and buffer tank
Cooling capacity: outdoor air temperature 35°C, water temperature 12°C / 7°C
Heating capacity: outdoor air temperature 7°C dry bulb and 6.2°C wet bulb, water temperature 40°C/45°C

⁻ Sound pressure level measured at a distance of 10 m and a height of 1.5 m above the ground in a free field (fan side).

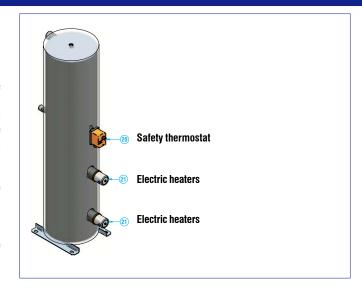
ELECTRIC HEATER INTEGRATION

The MXE series can be realized with incorporated buffer tank equipped with electric heaters to complete the operation in heat pump. Inside the water tank there are 2 electric heaters managed by the main board of the unit with two different steps.

These heaters activate in heat pump mode when the temperature of the outlet water is lower than the set threshold (parameter A08) and at the same time the external air temperature is lower than the threshold values of the two thermostats in the electric board (threshold can be regulated, and are preset at -5 °C and -10 °C). If air temperature is lower than -5 °C the first step activates, if it is lower than -10 °C also the second step starts

The integrative electric heaters work also as anti-freezing system and help also the defrosting.

In case of alarm (water flow, high pressure, low pressure, etc...) the main board switches them off automatically.



Code

	Commercial name of the series
MXE	Air/water high efficiency reversible heat pump
	Model
009	
011	
014	Gives information on the cooling capacity of the standard model
016	
019	
021	
	Operation
E	Heat pump with electric elements for heating integration
	Powersupply
0	400V 3N 50 Hz
M	230V singlephase 50Hz
2	400V 3N 50 Hz + thermal magnetic breaker
4	230V singlephase 50Hz + thermal magnetic breaker

Options and unit configuration

13 digits which customize the unit complying wuth the customer's requirements

Digit	Name.	Description
1	Expansi	ion valve
	Α	Electronic
2	Waterp	oump
	1	pump, exansion vessel, water charge valve
3	Water t	ank
	В	Present, BASE electric heating element
	Н	Present, HIGH electric heating element
4	Heatre	covery
	0	not present
5	Conden	sation control
	C	modulating with fan speed control
6	Antifree	eze kit
	Р	Present on evaporato and water pump
7		insulation
	1	Sound proofing insulation for compressor housing
8	Refrige	rant circuit accessories
	0	not present
	М	Pressure gauges
9	Remote	control panel
	0	not present
	2	RS485 port (Modbus or Carel protocol)
	S	Simplified remote control panel
	М	BASE microprocessor remote control panel (Modbus excluded)
	Х	ADVANCED microprocessor remote control panel
10		finned pack heat exchanger
	0	Standard
	R	Copper/Copper
	C	Cataphoresis
	В	Fins protection treatment
11		ion grille
	0	not present
	G	present
12		essoroptions
	0	Not present
	1	Power factor correction capacitor
	2	Soft starter
10	3 Oantus	Power factor correction capacitor + soft starter
13	Control	
	1	Base
	2	advanced



Technical data EXCELIA hi	igh effici	iency hea	it pumps	MXE E s	eries				
MXE E		009 M	009	011 M	011	014	016	019	021
Power supply	V-ph-Hz	230-1-50	400-3-50	230-1-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50
Cooling capacity	kW	7,33	7,46	9,34	9,34	12,20	14,40	16,05	18,50
Total power input **	kW	2,83	2,71	3,58	3,38	4,30	5,24	5,54	6,21
Max absorbed power – Version with integrative heaters BASIC	kW	8,0	7,9	8,9	8,6	10,0	10,6	13,3	14,2
Max absorbed power - Version with integrative heaters HI-POWER	kW	10,0	9,9	10,9	10,6	12,0	12,6	-	-
EER		2,98	3,19	2,91	3,10	3,10	2,96	3,10	3,17
ESEER		3,92	3,62	3,73	3,31	3,77	3,59	3,67	3,79
Heating capacity	kW	8,54	8,46	10,82	10,51	13,66	15,84	18,53	20,64
Total power input in heating mode	kW	3,15	2,99	3,72	3,47	4,47	5,24	5,71	6,31
COP		3,07	3,21	3,23	3,39	3,33	3,25	3,47	3,47
Maximum power input	Α	22,3	9,3	26,3	11,3	13,3	16,3	19,6	20,0
Starting absorbed current	Α	84	37	98	50	66	72	77	103
n° of scroll compressor / circuits		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
Low/high pressure switch	bar	0,7 / 42	0,7 / 42	0,7 / 42	0,7 / 42	0,7 / 42	0,7 / 42	0,7 / 42	0,7 / 42
n° of axial fan		2	2	2	2	2	2	4	4
Air flow	m³/h	7.705	7.705	7.705	7.705	7.355	7.355	12.679	12.679
Water flow in cooling mode	l/h	1.261	1.283	1.606	1.606	2.098	2.477	2.761	3.182
Water flow in heat pump	l/h	1.469	1.454	1.861	1.821	2.442	2.853	3.211	3.605
Diameter of hydrualic connections	=	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Available pressure head (cooling)	kPa	130	130	132	132	115	111	154	157
Available pressure head (heating)	kPa	118	118	121	125	103	98	143	148
Expansion tank	dm ³	5	5	5	5	5	5	5	5
Buffer tank	dm ³	30	30	30	30	30	30	30	50
Height	mm	1250	1250	1250	1250	1250	1250	1275	1275
Length	mm	1220	1220	1220	1220	1220	1220	1590	1590
Depth	mm	550	550	550	550	550	550	600	600
Sound power level	dB(A)	69	69	69	69	69	69	72	72
Sound pressure level	dB(A)	41	41	41	41	41	41	44	44
Transport weight *	kg	212	212	215	215	219	220	273	273
Operating weight *	kg	237,5	237,5	240,5	240,5	244,5	245,5	309,3	309,3

- * Weights referred to the version with pump and tank.** Absorbtions without electric heater integration.
- Cooling capacity: external air temperature 35°C, water temperature 12°C / 7°C
- Heating capacity: external air temperature with dry bulb 7°C and 6,2°C with wet bulb, water temperature 40°C / 45°C
- Sound pressure detected 10 m away and with a height of 1,5 m from the ground in a free space (fan side).

MXE E electric heat	ing elem	ents rate	d technic	cal data					
MXE E		009 M	009	011 M	011	014	016	019	021
Power supply	V/f/Hz	230-1-50	400-3N-50	230-1-50	400-3N-50	400-3N-50	400-3N-50	400-3N-50	400-3N-50
Power input of the BASE electric heating element first capacity step	kW	2,0	2,0	2,0	2,0	2,0	2,0	3,0	3,0
Current absorbed of the BASE electric heating element first capacity step	Α	8,7	2,9	8,7	2,9	2,9	2,9	4,4	4,4
Power input of the BASE electric heating element second capacity step	kW	2,0	2,0	2,0	2,0	2,0	2,0	3,0	3,0
Current absorbed of the BASE electric heating element second capacity step	Α	8,7	2,9	8,7	2,9	2,9	2,9	4,4	4,4
Total power input of the BASE electric heating element	kW	4,0	4,0	4,0	4,0	4,0	4,0	6,0	6,0
Total current absorbed of the BASE electric heating element	Α	17,4	5,8	17,4	5,8	5,8	5,8	8,8	8,8
Power input of the HIGH electric heating element first capacity step	kW	2,0	2,0	2,0	2,0	2,0	2,0	-	-
Current absorbed of the HIGH electric heating element first capacity step	Α	8,7	2,9	8,7	2,9	2,9	2,9	-	-
Power input of the HIGH electric heating element second capacity step	kW	4,0	4,0	4,0	4,0	4,0	4,0	-	-
Current absorbed of the HIGH electric heating element second capacity step	Α	17,4	5,8	17,4	5,8	5,8	5,8	-	-
Total power input of the HIGH electric heating element	kW	6,0	6,0	6,0	6,0	6,0	6,0	-	-
Total current absorbed of the HIGH electric heating element	Α	26,1	8,7	26,1	8,7	8,7	8,7	-	-



FLOOR: RADIANT COOLING AND HEATING

- > R410A
- > COMPRESSOR
- > ELECTRONIC EXPANSION VALVE AS STANDARD
- > CONDENSATION CONTROL ON PRESSURE
- > AUTO ADAPTIVE SET POINT
- > OPERATION WITH LOW WATER CONTENT (BUFFER TANK NOT NEEDED)
- > EXTREMELY LOW SOUND LEVEL
- > HYDRAULIC PLUG&PLAY
- > SMART DEFROST SYSTEM
- > LAN AND ERGO INTERCONNECTIVITY



MFE range is a specific product for the production of cold and hot water for radiant panels plants. It is made of 7 different models, available in cooling and heating versions.

The range is characterised by high efficiency level both in cooling mode and in heating mode:

Average EER 3,83 (Eurovent Energy Efficiency Class A) Average COP 4,02



The oversized finned pack heat exchanger and the oversized electronic expansion valve give higher energy efficiency level also with high evaporating temperature;

Plate heat exchanger with counter current operation in the heating mode. The production of hot water for radiant systems with low temperature allows you to reach high energy efficiency values.

The electronic expansion valve and the condensing control, allow to the unit to work in heating mode, with external air temperature up to -10°C and in cooling mode up to + 45°C. In this way you can extend the operation range of the unit.



It is possible to produce chilled water up to 20°C for radiant floor for sensible cooling thanks to the electronic expansion valve.

It is also possible to change the set point reducing, it for the dehumidification operation.

The electronic control panel automatically adjusts the unit set point as a function of the outdoor temperature to reduce power consuption and enlarge the range of working temperature .

The operation in systems with low water content now is possible even without the buffer tank thanks to the microprocessor control logic that reduce the compressor start up numbers and increase its working time.



CONSTRUCTIVE FEATURES

STRUCTURES

Structure and base built from galvanised sheet steel coated with corrosion-proof paint, RAL 9002 colour.

All bolts and screws and fastening devices are made of non-oxidisable materials, or carbon steel that has undergone surface-passivating treatments.

The compressor compartment is completely sealed and may be accessed on 3 sides thanks to easy-to-remove panels that greatly simplify maintenance and inspection.

The compressor compartment can be acoustically insulated on request in order to reduce the sound emission of the unit.

BUILT-IN HYDRONIC KIT

- High performance pump completely (body and rotor) made of stainless steel suitable ready to operate with glycol mix up to 35%.
 The pump motor is complete with internal thermal protection.
 - The pump is located in the compressor comparment and is easely reachable thanks to the openable panels.

The water pump is cooled by fresh air through a suitable grille.

- Expansion vessel.
- Safety valve.
- Filling valve.
- Automatic air purge.
- Differential pressure switch and antifreeze thermostat with probe on leaving water side.
- Buffer tank dowstream to the evaporator, best solution to reduce the chilled water variation due to the compressor ON/OFF operation.
- The Mechanical Y Filter is standard for all the versions to protect the plate evaporator.

REFRIGERANT CIRCUIT

- Scroll compressor (rotary up to 7 kW).
- Heat exchanger with stainless steel braze-welded plates optimised for type of plate and distribution for R410A.
- Finned block condenser coil with 8 mm copper pipping and aluminium fins, characterized by large dimensions.
- Mechanical drier filter.
- Refrigerant sight glass with humidity indicator.
- Thermostatic valve with external equalization and integrated MOP function.
- 4-way reversing valve (heat pump only).
- Check valves (heat pump only).
- Liquid receiver (heat pump only).
- High and low pressure switches.
- Safety valve.
- Schrader valves for checks and/or maintenance.
- Refrigerant manometers (options).

FAN MOTOR ASSEMBLY

Fan of axial type with airfoil shapes blades provided with protection grille and housed in a nozzle with special shape that icrease its performance. Fans are housed in nozzles with special shape to increase performance. Fans are directly coupled with low speed (6/8 poles) motors, protected with a thermal cutout.

Fan motor assembly is connected to the unit through rubber vibration dampers and its supported by a deidicated frame.

The use of finned pack coils with 8mm diameter copper pipe reduce the pressur drop on air side decreasing the sound level.

The condensation control (on pressure base) adjust automatically the fan speed, reducing the noise emission of the unit in the night operation and when the unit runs at partial loads.

FINNED PACK

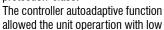
Finned pack heat exchangers with 8mm diameter copper tube, characterised by a large surfacce and specially designed to speed up the defrost cycle and to maximaze the integrate capacity of the unit.

ELECTRIC BOX

The electric box is built and wired according to the EEC 73/23 (LVD), to the 89/336 (EMCD) and related standards. Built with steel panels is protected by the unit's panels.

MICROPROCESSOR CONTROL

The control panel enables the complete control of MFE unit and can be easely accessed through a polycarbonate flap with IP 65 protection class.



water content avoiding the use of the buffer tank.

The outdoor temperature measure allows to adjust atomatically the unit set point to the real thermoal load in cooling operation and to keep the unit operate even at the most critical condition in winter time.

The controller is complete with MODBUS for an immediate conneted to ERGO network.

Main functions:

- Control of the entering water temperature.
- Defrosting management (MFE-H)
- fan speed control on pressure base (opzionale)
- Complete alarm management
- Automatic set point adjustment depending on the outdoor air tenmperature
- Can be conneted to an RS485 serial line (optional) for supervision/ teleassisitance operation
- A remote terminal that reproduces the control functions is available as optional (not compatible with ERGO).

Controlled devices:

- Compressor
- Fans
- 4-way reversing valve (MFE-H)
- Water pump
- Antifreeze kit (optional)
- Alarm relay

Advanced controller available on request to carry out the following functions:

- LAN up to 4 units
- Smart Defrost System

AVAILABLE OPTIONS

Compressor compartment insulation

Refrigerant gauges

Antifreeze kit

Partial heat recovery system 25% complete with on/off contact for circulation pump (not supplied)

Special treatment on finned coil (copper/copper, cataphoresysl blygold)
Remote control panels

Dampers

Condensing coil protection grille



How to place an order

MFE water chillers and heat punmps can be configured in order to meet many possible installation requirements.

Code

	Commercial name of the series
MFE	Air condensed water chiller and reversible heat pumps
	Model
005	
006	
800	Give information on the cooling capacity of the standard model
013	
017	
020	
023	
	Operation
C	Cooling only
Н	Heat punp
	Powersupply
0	400V 3N 50 Hz
M	230V - 1 - 50Hz
2	400V 3N 50 Hz + magnetic breaker
4	230V - 1 - 50Hz + magnetic breaker

Options and unit configuration

13 digits which customise the unit complying with the customer's requirements

Digit	Name	Description
1	Expans	ion valve
	Α	Electronic
2	Waterp	oump
	1	Pump, ex. vessel, water charge valve
3	Watert	ank
	0	Not present
	S	Present
4	Heat re	
	0	Not present
	D	Partial (25%) with auxiliary contact for pump (cooling only
		models)
5		sation control
	C	Modulating with fan speed control
6	Antifre	
	0	Not present
	P	Present, unit with pump and vessel
_	S	Present, unit with pump, vessel and tank
7		cinsulation
	0	Not present
0	1 Domino	Sound proofing insulation for compressor housing
8		rant circuit accessories
	0	Not present
0	M	Refrigerant gauges
9	0 0	e control panel Not present
	2	RS485 port (Modbus + Carel protocol)
	S	Simplified
	M	BASE microprocessor (modbus excluded)
	X	ADVANCED microprocessor
10	Special	<u> </u>
10	0 pesiai	Standard
	R	Copper / Copper
	C	Cataphoresis
	В	Blygold
11		iongrille
	0	Not present
	G	Present
12		essor option
	0	Not present
	1	Power factor correction capacitor
	2	Soft starter
	3	Power factor correction capacitor + soft starter
13	Control	
	1	Base microprocessor
	2	Advanced microprocessor
		•

N.B. The choice of some options an prevent the choice of other options or oblige the selection of other digit.

Please contacfr Galletti for verification



Air co	ndensed	water ch	iller for	radiant fl	oor MFE	C - Rate	ed techni	cal data				
MFE C		005 M	006 M	008 M	011	011 M	013	013 M	016	017	020	023
Power supply	V-ph-Hz	230-1-50	230-1-50	230-1-50	400-3-50	230-1-50	400-3-50	230-1-50	400-3-50	400-3-50	400-3-50	400-3-50
Cooling capacity	kW	5,24	6,62	8,62	11,15	11,10	12,46	12,48	16,00	17,10	19,78	23,16
Total power input	kW	1,52	1,84	2,49	3,23	3,39	3,54	3,55	4,58	4,72	5,90	6,95
EER		3,76	3,78	3,58	3,76	3,38	3,88	3,93	3,74	3,86	3,47	3,57
ESEER		3,39	3,36	3,16	3,61	3,19	3,38	3,40	3,49	3,59	3,35	3,40
Maximum current absorbed	Α	9,79	11,62	15,30	13,00	24,86	14,40	26,28	16,88	17,38	21,26	25,26
Starting ampere	Α	38	44	63	49	98	50	99	65	65	68	76
n° of scroll compressors / circuits		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
High/low pressure switch	bar	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42	2 / 42
n° of axial fans		1	1	1	2	2	2	2	2	2	4	4
Air flow	m ³ /h	3.635	3.406	3.406	7.385	7.385	6.939	6.939	6.939	6.939	9.990	9.307
Water flow	I/h	901	1.139	1.483	1.918	1.909	2.150	2.150	2.752	2.941	3.402	3.984
Water connections	"	1	1	1	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Water pump available head	kPa	61	58	49	48	48	84	84	79	62	102	94
Expansion vessel	dm ³	1	1	1	5	5	5	5	5	5	5	5
Water tank	dm ³	n.d.	n.d.	n.d.	30	30	30	30	30	30	50	50
Height	mm	760	760	760	1220	1220	1220	1220	1220	1220	1275	1275
Lenght	mm	990	990	990	1250	1250	1250	1250	1250	1250	1590	1590
Width	mm	450	450	450	560	560	560	560	560	560	600	600
Sound power level	dB(A)	66	66	67	69	69	69	69	69	69	71	71
	. ,	38	38	39	41	41	41	41	41	41	43	43
Sound pressure level Transport weight *	dB(A)				200							
Operation weight *	kg	98	100	107		200	202	202	209	209	260	260
,	kg	92	94	101	220	220	228	228	235	235	306	306
Air/water reversible heat pumps for radiant floor - Rated technical data												
, -			P		ilalit iloo	. Hatot	i tooiiiio					
MFE H		005 M	006 M	008 M	011	011 M	013	013 M	016	017	020	023
	V-ph-Hz								016 400-3-50	017 400-3-50	020 400-3-50	023 400-3-50
MFE H		005 M	006 M	008 M	011	011 M	013	013 M				
MFE H Power supply	V-ph-Hz	005 M 230-1-50	006 M 230-1-50	008 M 230-1-50	011 400-3-50	011 M 230-1-50	013 400-3-50	013 M 230-1-50	400-3-50	400-3-50	400-3-50	400-3-50
MFE H Power supply Cooling capacity	V-ph-Hz kW	005 M 230-1-50 5,10	006 M 230-1-50 6,40	008 M 230-1-50 8,30	011 400-3-50 10,94	011 M 230-1-50 10,88	013 400-3-50 12,23	013 M 230-1-50 12,23	400-3-50 15,49	400-3-50 16,64	400-3-50 19,14	400-3-50 22,57
MFE H Power supply Cooling capacity Cooling operation total power input	V-ph-Hz kW	005 M 230-1-50 5,10 1,53	006 M 230-1-50 6,40 1,87	008 M 230-1-50 8,30 2,54	011 400-3-50 10,94 3,23	011 M 230-1-50 10,88 3,48	013 400-3-50 12,23 3,55	013 M 230-1-50 12,23 3,55	400-3-50 15,49 4,60	400-3-50 16,64 4,77	400-3-50 19,14 6,00	400-3-50 22,57 7,00
MFE H Power supply Cooling capacity Cooling operation total power input EER	V-ph-Hz kW	005 M 230-1-50 5,10 1,53 3,76	006 M 230-1-50 6,40 1,87 3,78	008 M 230-1-50 8,30 2,54 3,58	011 400-3-50 10,94 3,23 3,76	011 M 230-1-50 10,88 3,48 3,38	013 400-3-50 12,23 3,55 3,88	013 M 230-1-50 12,23 3,55 3,93	400-3-50 15,49 4,60 3,74	400-3-50 16,64 4,77 3,86	400-3-50 19,14 6,00 3,47	400-3-50 22,57 7,00 3,57
MFE H Power supply Cooling capacity Cooling operation total power input EER ESEER	V-ph-Hz kW kW	005 M 230-1-50 5,10 1,53 3,76 3,39	230-1-50 6,40 1,87 3,78 3,36	230-1-50 8,30 2,54 3,58 3,16	011 400-3-50 10,94 3,23 3,76 3,61	011 M 230-1-50 10,88 3,48 3,38 3,19	013 400-3-50 12,23 3,55 3,88 3,38	013 M 230-1-50 12,23 3,55 3,93 3,40	400-3-50 15,49 4,60 3,74 3,49	400-3-50 16,64 4,77 3,86 3,59	400-3-50 19,14 6,00 3,47 3,35	400-3-50 22,57 7,00 3,57 3,40
MFE H Power supply Cooling capacity Cooling operation total power input EER ESEER Heating capacity	V-ph-Hz kW kW	230-1-50 5,10 1,53 3,76 3,39 4,91	230-1-50 6,40 1,87 3,78 3,36 6,33	230-1-50 8,30 2,54 3,58 3,16 8,10	011 400-3-50 10,94 3,23 3,76 3,61 10,85	230-1-50 10,88 3,48 3,38 3,19 10,96	013 400-3-50 12,23 3,55 3,88 3,38 11,45	230-1-50 12,23 3,55 3,93 3,40 11,45	400-3-50 15,49 4,60 3,74 3,49 14,46	400-3-50 16,64 4,77 3,86 3,59 15,57	400-3-50 19,14 6,00 3,47 3,35 18,34	400-3-50 22,57 7,00 3,57 3,40 21,66
MFE H Power supply Cooling capacity Cooling operation total power input EER ESEER Heating capacity Heating operation total power input	V-ph-Hz kW kW	230-1-50 5,10 1,53 3,76 3,39 4,91 1,38	230-1-50 6,40 1,87 3,78 3,36 6,33 1,70	230-1-50 8,30 2,54 3,58 3,16 8,10 2,20	011 400-3-50 10,94 3,23 3,76 3,61 10,85 2,86	230-1-50 10,88 3,48 3,38 3,19 10,96 3,03	013 400-3-50 12,23 3,55 3,88 3,38 11,45 3,28	230-1-50 12,23 3,55 3,93 3,40 11,45 3,28	400-3-50 15,49 4,60 3,74 3,49 14,46 4,04	400-3-50 16,64 4,77 3,86 3,59 15,57 4,10	400-3-50 19,14 6,00 3,47 3,35 18,34 4,95	400-3-50 22,57 7,00 3,57 3,40 21,66 5,89
MFE H Power supply Cooling capacity Cooling operation total power input EER ESEER Heating capacity Heating operation total power input COP	V-ph-Hz kW kW kW	005 M 230-1-50 5,10 1,53 3,76 3,39 4,91 1,38 4,00	230-1-50 6,40 1,87 3,78 3,36 6,33 1,70 4,06	230-1-50 8,30 2,54 3,58 3,16 8,10 2,20 3,93	011 400-3-50 10,94 3,23 3,76 3,61 10,85 2,86 4,00	011 M 230-1-50 10,88 3,48 3,38 3,19 10,96 3,03 3,64	013 400-3-50 12,23 3,55 3,88 3,38 11,45 3,28 3,93	013 M 230-1-50 12,23 3,55 3,93 3,40 11,45 3,28 3,93	400-3-50 15,49 4,60 3,74 3,49 14,46 4,04 4,02	400-3-50 16,64 4,77 3,86 3,59 15,57 4,10 4,17	400-3-50 19,14 6,00 3,47 3,35 18,34 4,95 3,95	400-3-50 22,57 7,00 3,57 3,40 21,66 5,89 4,06
MFE H Power supply Cooling capacity Cooling operation total power input EER ESEER Heating capacity Heating operation total power input COP Maximum current absorbed	V-ph-Hz kW kW kW	005 M 230-1-50 5,10 1,53 3,76 3,39 4,91 1,38 4,00 9,79	230-1-50 6,40 1,87 3,78 3,36 6,33 1,70 4,06 11,62	230-1-50 8,30 2,54 3,58 3,16 8,10 2,20 3,93 15,30	011 400-3-50 10,94 3,23 3,76 3,61 10,85 2,86 4,00 13,00	011 M 230-1-50 10,88 3,48 3,38 3,19 10,96 3,03 3,64 24,86	013 400-3-50 12,23 3,55 3,88 3,38 11,45 3,28 3,93 14,40	013 M 230-1-50 12,23 3,55 3,93 3,40 11,45 3,28 3,93 26,28	400-3-50 15,49 4,60 3,74 3,49 14,46 4,04 4,02 16,88	400-3-50 16,64 4,77 3,86 3,59 15,57 4,10 4,17 17,38 65	400-3-50 19,14 6,00 3,47 3,35 18,34 4,95 3,95 21,26	400-3-50 22,57 7,00 3,57 3,40 21,66 5,89 4,06 25,26
MFE H Power supply Cooling capacity Cooling operation total power input EER ESEER Heating capacity Heating operation total power input COP Maximum current absorbed Starting ampere n° of scroll compressors / circuits	V-ph-Hz kW kW kW	230-1-50 5,10 1,53 3,76 3,39 4,91 1,38 4,00 9,79 38	006 M 230-1-50 6,40 1,87 3,78 3,36 6,33 1,70 4,06 11,62	230-1-50 8,30 2,54 3,58 3,16 8,10 2,20 3,93 15,30 63	011 400-3-50 10,94 3,23 3,76 3,61 10,85 2,86 4,00 13,00 49	011 M 230-1-50 10,88 3,48 3,38 3,19 10,96 3,03 3,64 24,86 98	013 400-3-50 12,23 3,55 3,88 3,38 11,45 3,28 3,93 14,40 50	013 M 230-1-50 12,23 3,55 3,93 3,40 11,45 3,28 3,93 26,28 99	400-3-50 15,49 4,60 3,74 3,49 14,46 4,04 4,02 16,88 65	400-3-50 16,64 4,77 3,86 3,59 15,57 4,10 4,17 17,38	400-3-50 19,14 6,00 3,47 3,35 18,34 4,95 3,95 21,26 68 1/1	400-3-50 22,57 7,00 3,57 3,40 21,66 5,89 4,06 25,26 76
MFE H Power supply Cooling capacity Cooling operation total power input EER ESEER Heating capacity Heating operation total power input COP Maximum current absorbed Starting ampere	V-ph-Hz kW kW kW kW	005 M 230-1-50 5,10 1,53 3,76 3,39 4,91 1,38 4,00 9,79 38 1/1	230-1-50 6,40 1,87 3,78 3,36 6,33 1,70 4,06 11,62 44	230-1-50 8,30 2,54 3,58 3,16 8,10 2,20 3,93 15,30 63 1/1	011 400-3-50 10,94 3,23 3,76 3,61 10,85 2,86 4,00 13,00 49 1/1	230-1-50 10,88 3,48 3,38 3,19 10,96 3,03 3,64 24,86 98 1/1	018 400-3-50 12,23 3,55 3,88 3,38 11,45 3,28 3,93 14,40 50 1/1	230-1-50 12,23 3,55 3,93 3,40 11,45 3,28 3,93 26,28 99 1/1	400-3-50 15,49 4,60 3,74 3,49 14,46 4,04 4,02 16,88 65 1/1	400-3-50 16,64 4,77 3,86 3,59 15,57 4,10 4,17 17,38 65 1/1	400-3-50 19,14 6,00 3,47 3,35 18,34 4,95 3,95 21,26 68 1/1	400-3-50 22,57 7,00 3,57 3,40 21,66 5,89 4,06 25,26 76 1/1
MFE H Power supply Cooling capacity Cooling operation total power input EER ESEER Heating capacity Heating operation total power input COP Maximum current absorbed Starting ampere n° of scroll compressors / circuits High/low pressure switch	V-ph-Hz kW kW kW kW A A	005 M 230-1-50 5,10 1,53 3,76 3,39 4,91 1,38 4,00 9,79 38 1/1 2 / 42	230-1-50 6,40 1,87 3,78 3,36 6,33 1,70 4,06 11,62 44 1/1 2 / 42	230-1-50 8,30 2,54 3,58 3,16 8,10 2,20 3,93 15,30 63 1/1 2 / 42	011 400-3-50 10,94 3,23 3,76 3,61 10,85 2,86 4,00 13,00 49 1/1 2 / 42	230-1-50 10,88 3,48 3,38 3,19 10,96 3,03 3,64 24,86 98 1/1 2 / 42 2	018 400-3-50 12,23 3,55 3,88 3,38 11,45 3,28 3,93 14,40 50 1/1 2 / 42	230-1-50 12,23 3,55 3,93 3,40 11,45 3,28 3,93 26,28 99 1/1 2 / 42	400-3-50 15,49 4,60 3,74 3,49 14,46 4,04 4,02 16,88 65 1/1 2 / 42	400-3-50 16,64 4,77 3,86 3,59 15,57 4,10 4,17 17,38 65 1/1 2 / 42	400-3-50 19,14 6,00 3,47 3,35 18,34 4,95 3,95 21,26 68 1/1 2 / 42	400-3-50 22,57 7,00 3,57 3,40 21,66 5,89 4,06 25,26 76 1/1 2 / 42
MFE H Power supply Cooling capacity Cooling operation total power input EER ESEER Heating capacity Heating operation total power input COP Maximum current absorbed Starting ampere n° of scroll compressors / circuits High/low pressure switch n° of axial fans Air flow	V-ph-Hz kW kW kW A A bar	005 M 230-1-50 5,10 1,53 3,76 3,39 4,91 1,38 4,00 9,79 38 1/1 2 / 42 1 3.635	230-1-50 6,40 1,87 3,78 3,36 6,33 1,70 4,06 11,62 44 1/1 2 / 42 1 3,406	230-1-50 8,30 2,54 3,58 3,16 8,10 2,20 3,93 15,30 63 1/1 2 / 42 1 3,406	011 400-3-50 10,94 3,23 3,76 3,61 10,85 2,86 4,00 13,00 49 1/1 2 / 42 2 7,385	011 M 230-1-50 10,88 3,48 3,38 3,19 10,96 3,03 3,64 24,86 98 1/1 2 / 42 2 7,385	018 400-3-50 12,23 3,55 3,88 3,38 11,45 3,28 3,93 14,40 50 1/1 2 / 42 2 6,939	230-1-50 12,23 3,55 3,93 3,40 11,45 3,28 3,93 26,28 99 1/1 2 / 42 2 6,939	400-3-50 15,49 4,60 3,74 3,49 14,46 4,04 4,02 16,88 65 1/1 2 / 42 2 6,939	400-3-50 16,64 4,77 3,86 3,59 15,57 4,10 4,17 17,38 65 1/1 2 / 42 2 6,939	400-3-50 19,14 6,00 3,47 3,35 18,34 4,95 3,95 21,26 68 1/1 2 / 42 4 9,990	400-3-50 22,57 7,00 3,57 3,40 21,66 5,89 4,06 25,26 76 1/1 2 / 42 4 9,307
MFE H Power supply Cooling capacity Cooling operation total power input EER ESEER Heating capacity Heating operation total power input COP Maximum current absorbed Starting ampere n° of scroll compressors / circuits High/low pressure switch n° of axial fans Air flow Cooling operation water flow	V-ph-Hz kW kW kW A A Dar bar	005 M 230-1-50 5,10 1,53 3,76 3,39 4,91 1,38 4,00 9,79 38 1/1 2 / 42 1 3.635 901	006 M 230-1-50 6,40 1,87 3,78 3,36 6,33 1,70 4,06 11,62 44 1/1 2 / 42 1 3,406 1,139	230-1-50 8,30 2,54 3,58 3,16 8,10 2,20 3,93 15,30 63 1/1 2 / 42 1 3,406 1,483	011 400-3-50 10,94 3,23 3,76 3,61 10,85 2,86 4,00 13,00 49 1/1 2 / 42 2 7,385 1,918	011 M 230-1-50 10,88 3,48 3,38 3,19 10,96 3,03 3,64 24,86 98 1/1 2 / 42 2 7,385 1,909	018 400-3-50 12,23 3,55 3,88 3,38 11,45 3,28 3,93 14,40 50 1/1 2 / 42 2 6,939 2,150	230-1-50 12,23 3,55 3,93 3,40 11,45 3,28 3,93 26,28 99 1/1 2 / 42 2 6,939 2,150	400-3-50 15,49 4,60 3,74 3,49 14,46 4,04 4,02 16,88 65 1/1 2 / 42 2 6,939 2,752	400-3-50 16,64 4,77 3,86 3,59 15,57 4,10 4,17 17,38 65 1/1 2 / 42 2 6,939 2,941	400-3-50 19,14 6,00 3,47 3,35 18,34 4,95 3,95 21,26 68 1/1 2 / 42 4 9,990 3,402	400-3-50 22,57 7,00 3,57 3,40 21,66 5,89 4,06 25,26 76 1/1 2 / 42 4 9,307 3,984
MFE H Power supply Cooling capacity Cooling operation total power input EER ESEER Heating capacity Heating operation total power input COP Maximum current absorbed Starting ampere n° of scroll compressors / circuits High/low pressure switch n° of axial fans Air flow Cooling operation water flow Heating operation water flow	V-ph-Hz kW kW kW A A bar	005 M 230-1-50 5,10 1,53 3,76 3,39 4,91 1,38 4,00 9,79 38 1/1 2 / 42 1 3.635	230-1-50 6,40 1,87 3,78 3,36 6,33 1,70 4,06 11,62 44 1/1 2 / 42 1 3,406	008 M 230-1-50 8,30 2,54 3,58 3,16 8,10 2,20 3,93 15,30 63 1/1 2 / 42 1 3,406 1,483 1,393	011 400-3-50 10,94 3,23 3,76 3,61 10,85 2,86 4,00 13,00 49 1/1 2 / 42 2 7,385 1,918 1,865	011 M 230-1-50 10,88 3,48 3,38 3,19 10,96 3,03 3,64 24,86 98 1/1 2 / 42 2 7,385 1,909 1,885	018 400-3-50 12,23 3,55 3,88 3,38 11,45 3,28 3,93 14,40 50 1/1 2 / 42 2 6,939 2,150 1,969	230-1-50 12,23 3,55 3,93 3,40 11,45 3,28 3,93 26,28 99 1/1 2 / 42 2 6,939 2,150 1,969	400-3-50 15,49 4,60 3,74 3,49 14,46 4,04 4,02 16,88 65 1/1 2 / 42 2 6,939 2,752 2,487	400-3-50 16,64 4,77 3,86 3,59 15,57 4,10 4,17 17,38 65 1/1 2 / 42 2 6,939 2,941 2,679	400-3-50 19,14 6,00 3,47 3,35 18,34 4,95 3,95 21,26 68 1/1 2 / 42 4 9,990 3,402 3,154	400-3-50 22,57 7,00 3,57 3,40 21,66 5,89 4,06 25,26 76 1/1 2 / 42 4 9,307 3,984 3,726
MFE H Power supply Cooling capacity Cooling operation total power input EER ESEER Heating capacity Heating operation total power input COP Maximum current absorbed Starting ampere n° of scroll compressors / circuits High/low pressure switch n° of axial fans Air flow Cooling operation water flow Heating operation water flow Water connections	V-ph-Hz kW kW kW A A bar bir	005 M 230-1-50 5,10 1,53 3,76 3,39 4,91 1,38 4,00 9,79 38 1/1 2 / 42 1 3.635 901 845	006 M 230-1-50 6,40 1,87 3,78 3,36 6,33 1,70 4,06 11,62 44 1/1 2 / 42 1 3,406 1.139 1.088	008 M 230-1-50 8,30 2,54 3,58 3,16 8,10 2,20 3,93 15,30 63 1/1 2 / 42 1 3,406 1,483 1,393 1	011 400-3-50 10,94 3,23 3,76 3,61 10,85 2,86 4,00 13,00 49 1/1 2 / 42 2 7,385 1,918 1,865 1,1/4	230-1-50 10,88 3,48 3,38 3,19 10,96 3,03 3,64 24,86 98 1/1 2 / 42 2 7,385 1,909 1,885 11/4	018 400-3-50 12,23 3,55 3,88 3,38 11,45 3,28 3,93 14,40 50 1/1 2 / 42 2 6,939 2,150 1,969 1 1/4	230-1-50 12,23 3,55 3,93 3,40 11,45 3,28 3,93 26,28 99 1/1 2 / 42 2 6,939 2,150 1,969 1 1/4	400-3-50 15,49 4,60 3,74 3,49 14,46 4,04 4,02 16,88 65 1/1 2 / 42 2 6,939 2,752 2,487 1 1/4	400-3-50 16,64 4,77 3,86 3,59 15,57 4,10 4,17 17,38 65 1/1 2 / 42 2 6,939 2,941 2,679 1 1/4	400-3-50 19,14 6,00 3,47 3,35 18,34 4,95 3,95 21,26 68 1/1 2 / 42 4 9,990 3,402 3,154 1,1/4	400-3-50 22,57 7,00 3,57 3,40 21,66 5,89 4,06 25,26 76 1/1 2 / 42 4 9,307 3,984 3,726 1,1/4
MFE H Power supply Cooling capacity Cooling operation total power input EER ESEER Heating capacity Heating operation total power input COP Maximum current absorbed Starting ampere n° of scroll compressors / circuits High/low pressure switch n° of axial fans Air flow Cooling operation water flow Heating operation water flow Water connections Cooling operation available head	V-ph-Hz kW kW kW A A bar m³/h l/h kPa	005 M 230-1-50 5,10 1,53 3,76 3,39 4,91 1,38 4,00 9,79 38 1/1 2 / 42 1 3.635 901 845 1 61	006 M 230-1-50 6,40 1,87 3,78 3,36 6,33 1,70 4,06 11,62 44 1/1 2 / 42 1 3,406 1.139 1.088 1	230-1-50 8,30 2,54 3,58 3,16 8,10 2,20 3,93 15,30 63 1/1 2 / 42 1 3,406 1,483 1,393 1	011 400-3-50 10,94 3,23 3,76 3,61 10,85 2,86 4,00 13,00 49 1/1 2 / 42 2 7,385 1,918 1,865 1,1/4 48	230-1-50 10,88 3,48 3,38 3,19 10,96 3,03 3,64 24,86 98 1/1 2 / 42 2 7,385 1,909 1,885 1,1/4 48	018 400-3-50 12,23 3,55 3,88 3,38 11,45 3,28 3,93 14,40 50 1/1 2 / 42 2 6,939 2,150 1,969 1 1/4 84	230-1-50 12,23 3,55 3,93 3,40 11,45 3,28 3,93 26,28 99 1/1 2 / 42 2 6,939 2,150 1,969 1,1/4 84	400-3-50 15,49 4,60 3,74 3,49 14,46 4,04 4,02 16,88 65 1/1 2 / 42 2 6,939 2,752 2,487 1 1/4 79	400-3-50 16,64 4,77 3,86 3,59 15,57 4,10 4,17 17,38 65 1/1 2 / 42 2 6,939 2,941 2,679 1 1/4 62	400-3-50 19,14 6,00 3,47 3,35 18,34 4,95 3,95 21,26 68 1/1 2 / 42 4 9,990 3,402 3,154 1,1/4 102	400-3-50 22,57 7,00 3,57 3,40 21,66 5,89 4,06 25,26 76 1/1 2 / 42 4 9,307 3,984 3,726 1,1/4 94
MFE H Power supply Cooling capacity Cooling operation total power input EER ESEER Heating capacity Heating operation total power input COP Maximum current absorbed Starting ampere n° of scroll compressors / circuits High/low pressure switch n° of axial fans Air flow Cooling operation water flow Heating operation water flow Water connections Cooling operation available head Heating operation available head	V-ph-Hz kW kW kW A A bar m³/h l/h l/h kPa kPa	005 M 230-1-50 5,10 1,53 3,76 3,39 4,91 1,38 4,00 9,79 38 1/1 2 / 42 1 3.635 901 845 1 61 61	006 M 230-1-50 6,40 1,87 3,78 3,36 6,33 1,70 4,06 11,62 44 1/1 2 / 42 1 3,406 1,139 1,088 1 58	230-1-50 8,30 2,54 3,58 3,16 8,10 2,20 3,93 15,30 63 1/1 2 / 42 1 3,406 1,483 1,393 1 49 51	011 400-3-50 10,94 3,23 3,76 3,61 10,85 2,86 4,00 13,00 49 1/1 2 / 42 2 7.385 1.918 1.865 1.1/4 48 44	011 M 230-1-50 10,88 3,48 3,38 3,19 10,96 3,03 3,64 24,86 98 1/1 2 / 42 2 7.385 1.909 1.885 1.1/4 48	018 400-3-50 12,23 3,55 3,88 3,38 11,45 3,28 3,93 14,40 50 1/1 2 / 42 2 6,939 2,150 1,969 1 1/4 84 93	230-1-50 12,23 3,55 3,93 3,40 11,45 3,28 3,93 26,28 99 1/1 2 / 42 2 6,939 2,150 1,969 1 1/4 84 93	400-3-50 15,49 4,60 3,74 3,49 14,46 4,04 4,02 16,88 65 1/1 2 / 42 2 6,939 2,752 2,487 1 1/4 79 57	400-3-50 16,64 4,77 3,86 3,59 15,57 4,10 4,17 17,38 65 1/1 2 / 42 2 6,939 2,941 2,679 1 1/4 62 36	400-3-50 19,14 6,00 3,47 3,35 18,34 4,95 3,95 21,26 68 1/1 2 / 42 4 9,990 3,402 3,154 1 1/4 102 137	400-3-50 22,57 7,00 3,57 3,40 21,66 5,89 4,06 25,26 76 1/1 2 / 42 4 9,307 3,984 3,726 1,1/4 94 111
MFE H Power supply Cooling capacity Cooling operation total power input EER ESEER Heating capacity Heating operation total power input COP Maximum current absorbed Starting ampere n° of scroll compressors / circuits High/low pressure switch n° of axial fans Air flow Cooling operation water flow Heating operation water flow Water connections Cooling operation available head Heating operation available head Expansion vessel	V-ph-Hz kW kW kW A A bar m³/h l/h l/h kPa kPa dm³	005 M 230-1-50 5,10 1,53 3,76 3,39 4,91 1,38 4,00 9,79 38 1/1 2 / 42 1 3.635 901 845 1 61 61	006 M 230-1-50 6,40 1,87 3,78 3,36 6,33 1,70 4,06 11,62 44 1/1 2 / 42 1 3,406 1.139 1.088 1 58 57	008 M 230-1-50 8,30 2,54 3,58 3,16 8,10 2,20 3,93 15,30 63 1/1 2 / 42 1 3,406 1,483 1,393 1 49 51	011 400-3-50 10,94 3,23 3,76 3,61 10,85 2,86 4,00 13,00 49 1/1 2 / 42 2 7.385 1,918 1,865 1,1/4 48 44 5	011 M 230-1-50 10,88 3,48 3,38 3,19 10,96 3,03 3,64 24,86 98 1/1 2 / 42 2 7.385 1,909 1,885 1,1/4 48 44 5	013 400-3-50 12,23 3,55 3,88 3,38 11,45 3,28 3,93 14,40 50 1/1 2 / 42 2 6,939 2,150 1,969 1,1/4 84 93 5	230-1-50 12,23 3,55 3,93 3,40 11,45 3,28 3,93 26,28 99 1/1 2 / 42 2 6,939 2,150 1,969 1,1/4 84 93 5	400-3-50 15,49 4,60 3,74 3,49 14,46 4,02 16,88 65 1/1 2 / 42 2 6,939 2,752 2,487 1 1/4 79 57 5	400-3-50 16,64 4,77 3,86 3,59 15,57 4,10 4,17 17,38 65 1/1 2 / 42 2 6,939 2,941 2,679 1,1/4 62 36 5	400-3-50 19,14 6,00 3,47 3,35 18,34 4,95 3,95 21,26 68 1/1 2 / 42 4 9,990 3,402 3,154 1,1/4 102 137 5	400-3-50 22,57 7,00 3,57 3,40 21,66 5,89 4,06 25,26 76 1/1 2 / 42 4 9,307 3,984 3,726 1,1/4 94 111 5
MFE H Power supply Cooling capacity Cooling operation total power input EER ESEER Heating capacity Heating operation total power input COP Maximum current absorbed Starting ampere n° of scroll compressors / circuits High/low pressure switch n° of axial fans Air flow Cooling operation water flow Heating operation water flow Water connections Cooling operation available head Heating operation available head Expansion vessel Water tank	V-ph-Hz kW kW kW A A bar m³/h l/h l/h " kPa kPa dm³ dm³	005 M 230-1-50 5,10 1,53 3,76 3,39 4,91 1,38 4,00 9,79 38 1/1 2 / 42 1 3.635 901 845 1 61 61 61 1 n.d.	006 M 230-1-50 6,40 1,87 3,78 3,36 6,33 1,70 4,06 11,62 44 1/1 2 / 42 1 3,406 1.139 1.088 1 58 57 1 n.d.	230-1-50 8,30 2,54 3,58 3,16 8,10 2,20 3,93 15,30 63 1/1 2 / 42 1 3,406 1,483 1,393 1 49 51 1 n,d.	011 400-3-50 10,94 3,23 3,76 3,61 10,85 2,86 4,00 13,00 49 1/1 2 / 42 2 7.385 1,918 1,865 1,1/4 48 44 5 30	011 M 230-1-50 10,88 3,48 3,38 3,19 10,96 3,03 3,64 24,86 98 1/1 2 / 42 2 7.385 1.909 1.885 1.1/4 48 44 5	013 400-3-50 12,23 3,55 3,88 3,38 11,45 3,28 3,93 14,40 50 1/1 2 / 42 2 6,939 2,150 1,969 1,1/4 84 93 5 30	230-1-50 12,23 3,55 3,93 3,40 11,45 3,28 3,93 26,28 99 1/1 2 / 42 2 6,939 2,150 1,969 1,1/4 84 93 5	400-3-50 15,49 4,60 3,74 3,49 14,46 4,04 4,02 16,88 65 1/1 2 / 42 2 6,939 2,752 2,487 1,1/4 79 57 5 30	400-3-50 16,64 4,77 3,86 3,59 15,57 4,10 4,17 17,38 65 1/1 2 / 42 2 6,939 2,941 2,679 1,1/4 62 36 5 30	400-3-50 19,14 6,00 3,47 3,35 18,34 4,95 3,95 21,26 68 1/1 2 / 42 4 9,990 3,402 3,154 1 1/4 102 137 5	400-3-50 22,57 7,00 3,57 3,40 21,66 5,89 4,06 25,26 76 1/1 2 / 42 4 9,307 3,984 3,726 1 1/4 94 111 5 50
MFE H Power supply Cooling capacity Cooling operation total power input EER ESEER Heating capacity Heating operation total power input COP Maximum current absorbed Starting ampere n° of scroll compressors / circuits High/low pressure switch n° of axial fans Air flow Cooling operation water flow Heating operation water flow Water connections Cooling operation available head Heating operation available head Expansion vessel Water tank Height	V-ph-Hz kW kW kW A A bar m³/h l/h l/h " kPa kPa dm³ dm³ mm	005 M 230-1-50 5,10 1,53 3,76 3,39 4,91 1,38 4,00 9,79 38 1/1 2 / 42 1 3.635 901 845 1 61 61 61 1 n.d.	006 M 230-1-50 6,40 1,87 3,78 3,36 6,33 1,70 4,06 11,62 44 1/1 2 / 42 1 3,406 1.139 1.088 1 58 57 1 n.d.	230-1-50 8,30 2,54 3,58 3,16 8,10 2,20 3,93 15,30 63 1/1 2 / 42 1 3,406 1,483 1,393 1 49 51 1 n,d.	011 400-3-50 10,94 3,23 3,76 3,61 10,85 2,86 4,00 13,00 49 1/1 2 / 42 2 7.385 1,918 1,865 1,1/4 48 44 5 30 1220	011 M 230-1-50 10,88 3,48 3,38 3,19 10,96 3,03 3,64 24,86 98 1/1 2 / 42 2 7.385 1.909 1.885 1.1/4 48 44 5 30	013 400-3-50 12,23 3,55 3,88 3,38 11,45 3,28 3,93 14,40 50 1/1 2 / 42 2 6,939 2,150 1,969 1,1/4 84 93 5 30 1220	230-1-50 12,23 3,55 3,93 3,40 11,45 3,28 3,93 26,28 99 1/1 2 / 42 2 6,939 2,150 1,969 1,1/4 84 93 5 30 1220	400-3-50 15,49 4,60 3,74 3,49 14,46 4,02 16,88 65 1/1 2 / 42 2 6,939 2.752 2.487 1 1/4 79 57 5 30 1220	400-3-50 16,64 4,77 3,86 3,59 15,57 4,10 4,17 17,38 65 1/1 2 / 42 2 6,939 2,941 2,679 1,1/4 62 36 5 30 1220	400-3-50 19,14 6,00 3,47 3,35 18,34 4,95 3,95 21,26 68 1/1 2 / 42 4 9,990 3,402 3,154 1 1/4 102 137 5 50 1275	400-3-50 22,57 7,00 3,57 3,40 21,66 5,89 4,06 25,26 76 1/1 2 / 42 4 9,307 3,984 3,726 1 1/4 94 111 5 50 1275
MFE H Power supply Cooling capacity Cooling operation total power input EER ESEER Heating capacity Heating operation total power input COP Maximum current absorbed Starting ampere n° of scroll compressors / circuits High/low pressure switch n° of axial fans Air flow Cooling operation water flow Heating operation water flow Water connections Cooling operation available head Heating operation available head Expansion vessel Water tank	V-ph-Hz kW kW kW A A bar m³/h l/h l/h " kPa kPa dm³ dm³	005 M 230-1-50 5,10 1,53 3,76 3,39 4,91 1,38 4,00 9,79 38 1/1 2 / 42 1 3.635 901 845 1 61 61 61 1 n.d.	006 M 230-1-50 6,40 1,87 3,78 3,36 6,33 1,70 4,06 11,62 44 1/1 2 / 42 1 3,406 1.139 1.088 1 58 57 1 n.d.	230-1-50 8,30 2,54 3,58 3,16 8,10 2,20 3,93 15,30 63 1/1 2 / 42 1 3,406 1,483 1,393 1 49 51 1 n,d.	011 400-3-50 10,94 3,23 3,76 3,61 10,85 2,86 4,00 13,00 49 1/1 2 / 42 2 7.385 1,918 1,865 1,1/4 48 44 5 30	011 M 230-1-50 10,88 3,48 3,38 3,19 10,96 3,03 3,64 24,86 98 1/1 2 / 42 2 7.385 1.909 1.885 1.1/4 48 44 5	013 400-3-50 12,23 3,55 3,88 3,38 11,45 3,28 3,93 14,40 50 1/1 2 / 42 2 6,939 2,150 1,969 1,1/4 84 93 5 30	230-1-50 12,23 3,55 3,93 3,40 11,45 3,28 3,93 26,28 99 1/1 2 / 42 2 6,939 2,150 1,969 1,1/4 84 93 5	400-3-50 15,49 4,60 3,74 3,49 14,46 4,02 16,88 65 1/1 2 / 42 2 6,939 2,752 2,487 1 1/4 79 57 5 30	400-3-50 16,64 4,77 3,86 3,59 15,57 4,10 4,17 17,38 65 1/1 2 / 42 2 6,939 2,941 2,679 1,1/4 62 36 5 30	400-3-50 19,14 6,00 3,47 3,35 18,34 4,95 3,95 21,26 68 1/1 2 / 42 4 9,990 3,402 3,154 1 1/4 102 137 5	400-3-50 22,57 7,00 3,57 3,40 21,66 5,89 4,06 25,26 76 1/1 2 / 42 4 9,307 3,984 3,726 1 1/4 94 111 5 50

Sound power level

Transport weight *

Operation weight *

Sound pressure level

- Cooling capacity: external air temperature 35°C, water temperature 23°C / 18°C

dB(A)

dB(A)

kg

- Heating capacity: external air temperature with dry bulb 7°C and 6,2°C with wet bulb, water temperature 30°C / 35°C
- Sound power detected according to ISO 3741 ISO 3744 and EN 29614-1
- Sound pressure detected 10 m away and with a height of 1,5 m from the ground in a free space (fan side).



^{*} Weights referred to the version with pump and tank

STANDARD FEATURES OF MPI

- > R410A
- > SCROLL COMPRESSORS WITH VARIABLE SPEED
- > CONTINUOUS MODULATION OF COOLING CAPACITY BETWEEN 30 AND 110 HZ (PEAK 120 HZ)
- > ELECTRONIC EXPANSION VALVE
- > ADVANCED MICROPROCESSOR CONTROL WITH LCD DISPLAY
- > REAL CONTROL OF THE TEMPERATURE OF OUTLET WATER TEMPERATURE (+/- 15%)
- > AT PARTIAL LOADS THERE IS NO NEED OF ACCUMULATION
- > DYNAMIC SETPOINT ACCORDING TO A SIGNAL OF THE EXTERNAL AIR TEMPERATURE PROBE
- > CONDENSING CONTROL
- > SMART DEFROST SYSTEM FOR HEAT PUMPS
- > CIRCULATING WATER PUMO AND EXPANSION VESSEL

The real thermal load in an air-conditioning system is 90% of the time lower than 60% of the nominal load.

In small-capacity installations without a lot of terminals and low content of water the working at partial loads is particularly critical. In order the system to work in the proper way the modulation of the power supplied from the unit is necessary.

The control with inverter act on the number of rounds of the compressor modulating the mass flow of the refrigerant, the cooling capacity and the absorbed power.



The logic of the MPI series permit the user to regulate precisely the outlet water temperature adjusting it according to the thermal loads. With the control algorithm PID it is possible to regulate the water temperature between \pm 15%.

The control with inverter has two big different advantages: it adjusts the power given and absorbed from the compressor according to the real thermal load and moreover it allows the final user a very big reduction in the electrical absorption during the switching-on of the compressor itself.

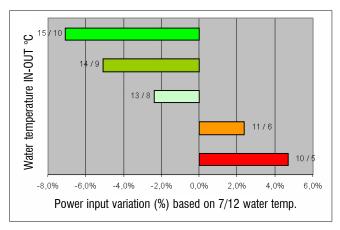
The electronic expansion valve is supplied as standard in the MPI units.





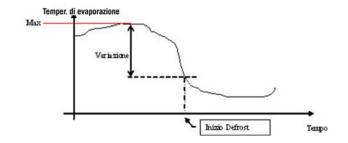
With the electronic expansion it is possible to regulate the refrigerant superheating and maximize the efficiency at partial loads.

With the electronic control it is possible to regulate automatically the setpoint according to external air temperature in order to reduce consumption and widen the working range.



The condensing control adjust the number of fan rounds to the real working conditions. The results of this are better working conditions, reduction in sound levels at partial loads and the possibility to work over the conventional limits in cooling mode (as far as -10°C of external air temperature).

In the heat pump models the exclusive defrosting system is able to identify correctly performance lacks in the external exchanger because of the presence of ice. Moreover with it, it is possible to minimize the time of this process.





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Preliminary rated technical data inverter-driven water chillers and heat pumps MPI series												
MODEL				015				027				
Power supply	V-ph-Hz	400-3N-50 400-3N-50)					
Inverter control	Hz	30	60	90	110	120	30	60	90	110	120	
Cooling capacity	kW	4,40	9,20	12,70	14,70	15,70	8,30	16,90	23,90	27,80	29,50	
Cooling operation total power input	kW	1,6	2,6	4,2	5,3	5,7	3,1	5,5	8,5	10,5	11,4	
EER		2,8	3,6	3,0	2,8	2,8	2,7	3,1	2,8	2,6	2,6	
Heating capacity	kW	4,8	9,9	14,5	17,4	18,8	9,2	18,5	27,1	32,4	34,0	
Heating operation total power input	kW	1,70	2,87	4,37	5,50	6,00	3,40	5,50	8,40	10,80	11,80	
COP		2,80	3,40	3,30	3,20	3,10	2,70	3,40	3,20	3,00	2,90	
N° of scroll compressors/ refrigerant circuit	n°			1/1					1 / 1			
Height	mm			1250					1275			
Length	mm			1220					1590			
Width	mm			550					600			
Sound power level	dB(A)	63,5	66	68,5	69	70	67,5	69	71,5	73,5	74,5	
Sound pressure level	dB(A)	35,5	38	40,5	41	42	39,5	41	43,5	45,5	46,5	

- Cooling capacity: external air temperature 35°C, water temperature 12°C / 7°C
 Heating capacity: external air temperature with dry bulb 7°C and 6,2°C with wet bulb, water temperature 40°C / 45°C
 Sound pressure detected 10 m away and with a height of 1,5 m from the ground in a free space (fan side).



ELECTRIC MODULES

The electric EMC modules have been designed to integrate the functioning of Galletti heat pumps, if necessary further to inevitable reduction of the heat capacity linked to the lowering of the external ait temperature.

It is about water tanks inside of which two armoured electric heaters are inserted, activate dfrom the electric board, according to the logic of regulation as follows.

The two electric heaters inside of the tank are managed by the unit control main board.

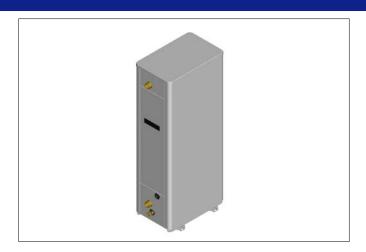
They are activated in heat pump mode when the temperature of the outlet water produced by the condenser is lower the set threshold and at the same time the external air temperature is lower the values of the two thermostats in the electric board (the thresholds can be regulated and pre-set at -5° C and at -10° C).

If the air temperature is lower than -5°C the first step activates, if it is lower than -10°C the second steps activate as well.

The integrative electric heaters work also as anti-freezing system and help also the defrosting.

In case of alarm (water flow, high pressure, low pressure, etc...) the main board swithces them off automatically.

The EMC modules can be installed both inside and generally near the technical compartment. In this case the ait-temperature probes must be placed outside of the compartment where is located the module in order to measure correctly the external air temperature (no that of the technical compartment).



EMC modules can be used together with Galletti heat pumps in the following models/series.

Heat pump	from model	to model
• MCE H	009	026
• MPE H	004	027
• MXE H	011	021
• MFE H	005	023

EMC modules are NOT compatible with the MXE E heat pumps series as they are already equipped with electric heater in the incorporated tank.

EMC tank with electric heating elements – rated technical data											
EMC		EMC22M0000A	EMC22T0000A	EMC24M0000A	EMC24T0000A	EMC33T0000A					
Power supply	V/f/Hz	230-1-50	400-3N-50	230-1-50	400-3N-50	400-3N-50					
n° of capacity steps		2	2	2	2	2					
Power input of electric heating element 1° capacity steps	kW	2,0	2,0	2,0	2,0	3,0					
Current absorbed of electric heating element 1° capacity steps	Α	8,7	2,9	8,7	2,9	4,4					
Power input of electric heating element 2° capacity steps	kW	2,0	2,0	4,0	4,0	3,0					
Current absorbed of electric heating element 2° capacity steps	Α	8,7	2,9	17,4	5,8	4,4					
Total power input of electric heating elements	kW	4,0	4,0	6,0	6,0	5,0					
Total current absorbed of electric heating elements	Α	17,4	5,8	26,1	8,7	8,8					
Regulation range of the electric heating elements thermostat	°C	-10 °C / 20°C									
Water tank	dm ³	30	30	30	30	50					
Height	mm	1146	1146	1146	1146	1211					
Length	mm	364	364	364	364	364					
Width	mm	466	466	466	466	531					
Hydraulic connections	inches	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4					
Transport weight	kg	45	46	47	48	58					
Operation weight	kg	71	72	73	74	104					





AIR-CONDENSED MOTO-CONDENSING UNITS

To be used in systems in two sections, the units of the MTE series can be joined to exchange batteries of air handling units.

The outdoor MTE moto-condensing units have been designed on the base of the MPE series; they offer a high efficiency with extremely low sound levels.

They are equipe with:

- > interception taps on liquid and gas sides ;
- electric heater on compressor carter to obstacle the dilution of the oil during stops:
- > pre-load raised at steam with nitrogen;
- > schrader valvoles for the load operations with pressures control;
- > indicator for humidity and liquid flow located in order to be seen from the outside without removing panels;
- electric board with control microprocessor accessbile from the outside and output in very low tension with the thermostatic control with clean unit contact, external sectionator, sequence/phase control, compressor protection, soft starter of the compressor when starting.



Code

	Commercial name of the series
MTE	Air condensed moto-condensing unit for outdoor installation
	Model
004	
005	
007	Gives information on the cooling capacity of the standard model
009	
010	
012	
013	
015	
018	
021	
024	
029	
033	
038	
042	
058	
071	0
	Operation
C	Cooling only unit
0	Power supply 400V 3N 50 Hz
-	
M	230V singlephase 50Hz

Option and unit configuration

13 digits which customize the unit complying with the customer's requirements:

Digit	Name.	Description
1		l expansion device
	0	Not present
	T	Traditional
	Α	Electronic230V
2	Liquid r	
	0	Not present
	2	Present with shut-off valve
3		ne accessory
	0	Not present
	S	Solenoide valve on liquid line
4	Heatre	
	0	Not present
5		sation control
	0	Not present
	C	Modulating with fan speed control
6		equenze relay
-	1	Present
/		cinsulation
	0	Not present
	1	Sound proofing insulation for compressor
8		rant circuit accessories
	0	Not present
0	M	Refrigerant pressure gauges
9		control
	0	Not present
	2	RS 485 port (modbus or carel protocol)
	S	Simplified remote control
4.0	M	Base microprocessor remote
10	Special 0	Standard
	U R	
	n C	Copper/Copper Cataphoresis
	В	Fins protection treatment
11	_	ser protection grille
11	0	Not present
	G	Present
12		essor options
174	Compre 1	Crackcase electric heater
	2	Soft starter
13	_	
10	1	Base
13	Control	panel



Air-cooled moto-condensing unit only cooling for outdoor installation MTE

MTE air cooled moto-condensing units - PRELIMINARY technical data													
MTE-C		004 M	005 M	007 M	009 M	009	010 M	010	012	013	015		
Power supply	V-ph-Hz	230-1-50	230-1-50	230-1-50	230-1-50	400-3N-50		400-3N-50	400-3N-50	400-3N-50			
Cooling capacity	kW	4,30	5,40	7,11	9,12	9,15	9,60	9,58	12,15	13,43	15,26		
Total power input	kW	1,36	1,72	2,30	3,34	3,15	3,36	3,36	4,42	4,43	5,48		
EER		3,17	3,15	3,10	2,73	2,91	2,86	2,85	2,75	3,03	2,78		
Maximum power input	kW	2,3	2,8	2,9	3,0	3,0	4,8	6,8	8,3	8,6	10,1		
Maximum current absorbed	Α	11,7	14,2	14,7	14,7	7,5	24,3	12,4	14,9	15,4	18,0		
Startying ampere	А	48	63	63	63	45	97	48	63	63	66		
n° of scroll compressors / circuits						1,	/ 1	•		•			
Rated amount of refrigerant requested	kg	1,5	1,5	2	2	2	2,3	2,3	2,3	3	3		
High/low pressure switch	bar					2 /	42						
n° of axial fans				1					2				
Air flow	m³/h	3.635	3.635	3.406	3.406	3.406	6.686	6.686	6.686	5.986	5.986		
Gas line connection	mm	16	16	16	16	16	22	22	22	22	22		
Liquid line connection	mm	10	10	10	10	10	12	12	12	12	12		
Height	mm	758	758	758	758	758	1225	1225	1225	1225	1225		
Lenght	mm	960	960	960	960	960	1220	1220	1220	1220	1220		
Width	mm	450	450	450	450	450	550	550	550	550	550		
Sound Power level	dB(A)	67	67	67	67	67	71	71	71	71	71		
Sound pressure level	dB(A)	39	39	39	39	39	43	43	43	43	43		
		018	021	024	029	033	038	042	058	071			
Power supply	V-ph-Hz	400-3N-50											
Cooling capacity	kW	18,42	20,79	24,41	29,26	32,95	37,70	42,29	58,11	70,79			
Total power input	kW	6,65	7,50	8,42	9,88	11,45	12,27	13,45	17,87	24,21			
EER		2,77	2,77	2,90	2,96	2,88	3,07	3,14	3,25	2,92			
Maximum power input	kW	12,4	13,5	15,6	18,1	19,3	22,2	22,4	28,8	38,1			
Maximum current absorbed	Α	23,3	25,2	28,7	35,2	37,2	42,2	41,3	56,3	70,3			
Startying ampere	Α	73	102	102	130	163	158	160	215	260			
n° of scroll compressors / circuits						1 / 1		•		•			
Rated amount of refrigerant requested	kg	3,8	3,8	4,1	3,6	4,0	5,5	7,0	7,0	10			
High/low pressure switch	bar					2 / 42							
n° of axial fans			2			4			2				
Air flow	m³/h	11.940	11.940	11.460	21.500	21.500	19.700	21.230	20.050	20050			
Gas line connection	mm	28	28	28	32	32	32	35	42	42			
Liquid line connection	mm	16	16	16	16	16	16	16	22	22			
Height	mm	1225	1225	1225	1275	1275	1275	1485	1485	1485			
Lenght	mm	1220	1220	1220	1565	1565	1565	1990	1990	1990	1		
Width	mm	550	550	550	601	601	601	950	950	950			
Sound Power level	dB(A)	78	78	78	81	81	81	80	80	80	1		
Sound pressure level	dB(A)	50	50	50	53	53	53	52	52	52			

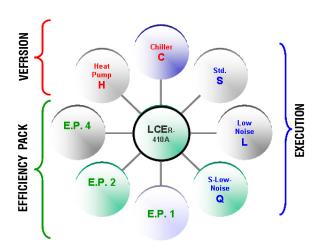
⁻ Cooling capacity: external air temperature 35°C, evaporating temperature 5°C

⁻ Sound pressure detected 10 m away and with a height of 1,5 m from the ground in a free space (fan side).

LCE: range and customization

The use of R410A in units specifically designed for this refrigerant is giving considerable performance advantages due to the high heat exchange coefficient and low pressure drops in the exchangers, which lead to an increase of efficiency and energy savings.

The LCE series involve a range of 17 sizes and, considering all the different versions and optionals, a total availability of 150 models in only cooling and heat pumps mode, with cooling/heating capacity among 40 and 320 kW, which allow to create "customized" solution, matching the different installations requests.



> VERSION

- C Chiller-Only cooling
- H Reversibile heat pump

> EFFICIENCY PACK

The possibility to realize different combination / refrigerant circuit/ compressors allows to personalize the efficiency levels at full load and/or at partial load operations

- 2x circuit/2x compressors
 This solution is designed to give the best efficiency at full load (EER and COP)
- 1x circuit/2x comrpessors
 This solution is designed to give the best efficiency at partial load, reaching an ESEER level of 4
- 4. 2x cirucit/ 4xcmpressors This solution allow toh ave 4 capacity steps, followiing the user load in a closet way and redeucing the number of compressors on/off

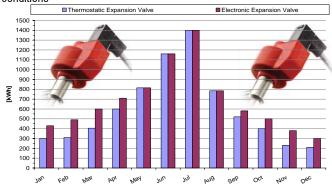
> EXECUTION

- S Esecuzione standard
- L Low Noise with reduced noise levels
- **Q** Super low noise with very low noise levels

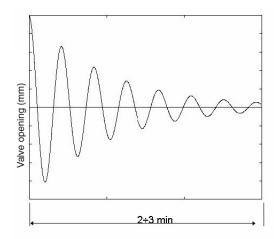


ELECTRONIC EXPANSION VALVE

All the sizes/versions are equipped with an electronic expansion valve as standard, to have maintain the high efficiency at all the different working conditions



This component is able to adjust the unit operation according to the real time working conditions, keeping the efficiency at bets level. In case of a sudden variation in the thermal load the traditional expansion valve before reaching the balance condition has 2-3 minute wait-time. Proactive action of an electronic expansion valve.



In case of compressors on/off request:

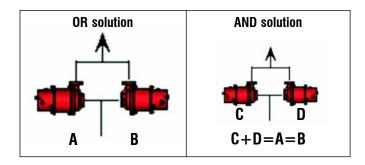
- The valve driver pre-set the valve opening very closet o the equilibrium
- With small adjustments the valve reach shortly the optimum opening position
- The valve become a por-active component, of the refrigerant system
- The transitory perod become very short
- The system become more efficient during the continuos operation increasing the EER and therefore with energy saving



HYDRAULIC OPTIONS

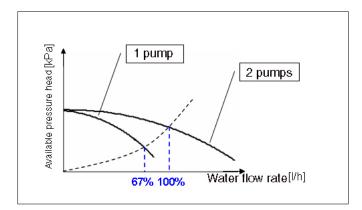
A complete hydrulic kit can be mounted inside the unit without changing the basic dimensions and with the following possibiliies on the water pump side:

- · single pump, with standard or up-rated pressure head
- double pump, with standard or up-rated pressure head in OR configuration: one working and one in stand by. The microprocessor control will automatically make the change over to have the same working hours
- double pump, with standard or up-rated pressure head in AND configuration: both pumps working in parallel



With parallel connection the water flow is splitted among the 2 pumps in the proportion $1/\sqrt{3}$;

At part load operation onle 1 pump is working with an energy saving up to 30%.



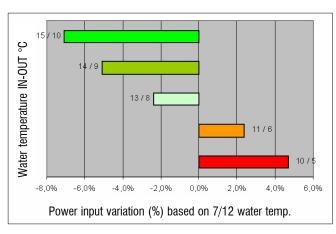
With the double pump in AND configuration, it is obligatory to have the advanced microprocessor control which has to manage the pumps on/off depending on real time part loading of the unit, which is statistically correspongin to the 97% of the unit life's operation

All the LCE units are provided with the water connections on the external side of the frame. Victaulic connections are available as optionals



CONTROL

The microprocessor Management allow to automatically control the set point in relation to the ambient temperature (air sensor available as option) to reduce the energy consumption and enlarge the working range. In the summer operation the set point adjustement starts with an ambient temperature of 30 $^{\circ}\text{C}$



The patented defrosting systems (available only with advanced control), is able to check in real time the evaporator freezing starting and acting to reduce the defrosting timing.

INTERCONNECTIVITY

As standard with Ergo supervision system

With advanced control, it is possible to realize the following:

- Lan network
- Kit GSM for the reading and setting of parameter via mobile telephone
- WEB kit for the reading and setting of parameter via remote PC thorugh the IP address of the unit

REDUCTION OF THE OVERALL DIMENSIONS AND TRANSPORT COSTS

Reduction of the foot-print and increase in the power density (kW/m2). Thanks to the reduction of the depth (now 1180 mm as far as size 160) it is possible to lower the transport costs.





LCE package :	air condensed wa	iter ch	illers -	STAN	DARD	execu	tion - I	Rated t	echnic	al dat	a				
Approximate thermal output (kW)		45	50	60	70	80		90			100			120	
Efficiency pack		2	2	2	2	2	1	2	4	1	2	4	1	2	Т
LCECS		042	052	062	072	082	091	092	094	101	102	104	121	122	
Power supply	V-ph-Hz	042	UJZ	UUZ	UIZ	002	091		-3-50	101	102	104	121	122	
Cooling capacity	kW	ND	ND	63.30	69.20	76.50	92.20	92.20	ND	102.70	102.70	ND	124.10	124,10) [
Total power input	kW	ND	ND	22.57	25.36	28.97	33.05	33.05	ND	39.46	39.46	ND	43.13	43.14	_
EER .	KVV	ND	ND	2,80	2,73	2,64	2,79	2,79	ND	2,60	2,60	ND	2,88	2,88	1
n° of scroll compressors / circuits		ND	ND	2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	ND	2 / 2	2 / 1	ND	2 / 2	2 / 1	+
n° of axial fans		ND	ND	4.00	4.00	4.00	6.00	6.00	ND	6.00	6,00	ND	8.00	8.00	4
Air flow	m³/h	ND	ND	21379	21379	21379	30913	30913	ND	30913	30913	ND	41340	41340)
Water flow		ND	ND	10887	11902	13158	15858	15858	ND	17665	17665	ND	21346	21346	_
			ND		34		31	31		38		ND			4
Water pressure drop	kPa kPa	ND ND	ND ND	46 126	133	42 119	130	130	ND ND	119	38 119	ND	39 108	39 108	+
Water pump available head			ND ND	200	200	200	220	220		220	220	ND	340	340	+
Water tank	dm ³	ND							ND	1720					+
Height	mm	ND	ND	1720	1720	1720	1720	1720	ND		1720	ND	1720	1720	+
Lenght	mm	ND	ND	2010	2010	2010	2360	2360	ND	2360	2360	ND	3190	3190	+
Width	mm	ND	ND	1185	1185	1185	1185	1185	ND	1185	1185	ND	1185	1185	+
Sound power level	dB(A)	ND	ND	80	80	80	82	82	ND	82	82	ND	82	82	+
Sound pressure level	dB(A)	ND	ND	52	52	52	54	54	ND	54	54	ND	54	54	1
Standard unit operating weight	kg	ND	ND	540	570	650	730	730	ND	730	730	ND	1010	1010	1
Unit with pump and full tank operating weight	kg	ND	ND	8747	907	987	1138	1138	ND	1138	1138	ND	1581	1581	ļ
LCE package air	condensed water	chille	rs - S 1	ANDA	RD exe		ı - Rat								
Approximate thermal output (kW)		L	140			160		170	190	210	240	270	290	320	
Efficiency pack		1	2	2	1	2	4	4	4	4	4	4	4	4	
LCECS		141	142	144	161	162	164	174	194	214	244	274	294	324	Ĺ
Power supply	V-ph-Hz							1 / 1							
Cooling capacity	kW														-
	KVV	138,40	138,40	140,37	155,00	155,00	153,36	162,00	186,60	209,00	236,90	271,60	295,50	313,90	_
Total power input	kW	138,40 48,24	138,40 48,24	140,37 47,79	155,00 58,63	155,00 58,63	153,36 56,04	162,00 56,80	186,60 70,70	209,00 83,30	236,90 92,90	271,60 104,21	295,50 112,79	313,90 120,20	_
· · ·		48,24 2,87	<u> </u>	47,79 2,94	58,63 2,64	58,63 2,64	56,04 2,74	56,80 2,85	70,70		,		, <u>'</u>	<u> </u>	_
EER		48,24	48,24	47,79 2,94 4 / 2	58,63	58,63	56,04 2,74 4 / 2	56,80 2,85 4 / 2	70,70 2,64 4 / 2	83,30	92,90	104,21 2,61 4 / 2	112,79	120,20)
EER n° of scroll compressors / circuits		48,24 2,87	48,24	47,79 2,94	58,63 2,64 2 / 2 8	58,63 2,64	56,04 2,74	56,80 2,85	70,70	83,30 2,51	92,90 2,55	104,21 2,61	112,79	120,20 2,61)
EER		48,24 2,87 2 / 2	48,24 2,87 2 / 1	47,79 2,94 4 / 2	58,63 2,64 2 / 2	58,63 2,64 2 / 1	56,04 2,74 4 / 2	56,80 2,85 4 / 2	70,70 2,64 4 / 2	83,30 2,51 4 / 2	92,90 2,55 4 / 2	104,21 2,61 4 / 2	112,79 2,62 4 / 2	120,20 2,61 4 / 2)
EER n° of scroll compressors / circuits n° of axial fans Air flow	kW	48,24 2,87 2 / 2 8 39890 23805	48,24 2,87 2 / 1 8 39890 23805	47,79 2,94 4 / 2 8 39890 24143	58,63 2,64 2 / 2 8 39890 26660	58,63 2,64 2 / 1 8 39890 26660	56,04 2,74 4 / 2 8 39890 26378	56,80 2,85 4 / 2 6 67672 27864	70,70 2,64 4 / 2 6 67672 32095	83,30 2,51 4 / 2 6 67672 35948	92,90 2,55 4 / 2 6 75478 40747	104,21 2,61 4 / 2 8 103511 46716	112,79 2,62 4 / 2 8 97902 50827	120,20 2,61 4 / 2 8	2
EER n° of scroll compressors / circuits n° of axial fans Air flow Water flow	kW m³/h	48,24 2,87 2 / 2 8 39890	48,24 2,87 2 / 1 8 39890	47,79 2,94 4 / 2 8 39890	58,63 2,64 2 / 2 8 39890	58,63 2,64 2 / 1 8 39890	56,04 2,74 4 / 2 8 39890	56,80 2,85 4 / 2 6 67672	70,70 2,64 4 / 2 6 67672	83,30 2,51 4 / 2 6 67672	92,90 2,55 4 / 2 6 75478	104,21 2,61 4 / 2 8 103511	112,79 2,62 4 / 2 8 97902	120,20 2,61 4 / 2 8 97902	2
EER n° of scroll compressors / circuits n° of axial fans Air flow Water flow Water pressure drop	kW m³/h l/h	48,24 2,87 2 / 2 8 39890 23805	48,24 2,87 2 / 1 8 39890 23805	47,79 2,94 4 / 2 8 39890 24143	58,63 2,64 2 / 2 8 39890 26660	58,63 2,64 2 / 1 8 39890 26660	56,04 2,74 4 / 2 8 39890 26378	56,80 2,85 4 / 2 6 67672 27864	70,70 2,64 4 / 2 6 67672 32095	83,30 2,51 4 / 2 6 67672 35948	92,90 2,55 4 / 2 6 75478 40747	104,21 2,61 4 / 2 8 103511 46716	112,79 2,62 4 / 2 8 97902 50827	120,20 2,61 4 / 2 8 97902 53990	2
EER n° of scroll compressors / circuits n° of axial fans Air flow Water flow Water pressure drop Water pump available head	m³/h //h kPa	48,24 2,87 2 / 2 8 39890 23805 49	48,24 2,87 2 / 1 8 39890 23805 49	47,79 2,94 4 / 2 8 39890 24143 50	58,63 2,64 2 / 2 8 39890 26660 42	58,63 2,64 2 / 1 8 39890 26660 42	56,04 2,74 4 / 2 8 39890 26378 43	56,80 2,85 4 / 2 6 67672 27864 46	70,70 2,64 4 / 2 6 67672 32095 49	83,30 2,51 4 / 2 6 67672 35948 50	92,90 2,55 4 / 2 6 75478 40747 53	104,21 2,61 4 / 2 8 103511 46716 41	112,79 2,62 4 / 2 8 97902 50827 49	120,20 2,61 4 / 2 8 97902 53990 55	2
EER n° of scroll compressors / circuits n° of axial fans Air flow Water flow Water pressure drop Water pump available head Water tank	m ³ /h I/h kPa kPa	48,24 2,87 2 / 2 8 39890 23805 49 150	48,24 2,87 2 / 1 8 39890 23805 49 150	47,79 2,94 4 / 2 8 39890 24143 50 147	58,63 2,64 2 / 2 8 39890 26660 42 147	58,63 2,64 2 / 1 8 39890 26660 42 147	56,04 2,74 4 / 2 8 39890 26378 43	56,80 2,85 4 / 2 6 67672 27864 46 155	70,70 2,64 4 / 2 6 67672 32095 49	83,30 2,51 4 / 2 6 67672 35948 50 147	92,90 2,55 4 / 2 6 75478 40747 53 171	104,21 2,61 4 / 2 8 103511 46716 41 170	112,79 2,62 4 / 2 8 97902 50827 49 152	120,20 2,61 4 / 2 8 97902 53990 55 137	?
EER n° of scroll compressors / circuits n° of axial fans Air flow Water flow Water pressure drop Water pump available head Water tank Height	m³/h I/h kPa kPa dm³	48,24 2,87 2 / 2 8 39890 23805 49 150 340	48,24 2,87 2 / 1 8 39890 23805 49 150 340	47,79 2,94 4 / 2 8 39890 24143 50 147 340	58,63 2,64 2 / 2 8 39890 26660 42 147 340	58,63 2,64 2 / 1 8 39890 26660 42 147 340	56,04 2,74 4 / 2 8 39890 26378 43 148 340	56,80 2,85 4 / 2 6 67672 27864 46 155 600	70,70 2,64 4 / 2 6 67672 32095 49 133 600	83,30 2,51 4 / 2 6 67672 35948 50 147 600	92,90 2,55 4 / 2 6 75478 40747 53 171 600	104,21 2,61 4 / 2 8 103511 46716 41 170 600	112,79 2,62 4 / 2 8 97902 50827 49 152 600	120,20 2,61 4 / 2 8 97902 53990 55 137 600)
EER n° of scroll compressors / circuits n° of axial fans Air flow Water flow Water pressure drop Water pump available head Water tank Height Lenght	m³/h I/h kPa kPa dm³ mm	48,24 2,87 2 / 2 8 39890 23805 49 150 340 1720	48,24 2,87 2 / 1 8 39890 23805 49 150 340 1720	47,79 2,94 4 / 2 8 39890 24143 50 147 340 1720	58,63 2,64 2 / 2 8 39890 26660 42 147 340 1720	58,63 2,64 2 / 1 8 39890 26660 42 147 340 1720	56,04 2,74 4 / 2 8 39890 26378 43 148 340 1720	56,80 2,85 4 / 2 6 67672 27864 46 155 600 1830	70,70 2,64 4 / 2 6 67672 32095 49 133 600 1830	83,30 2,51 4 / 2 6 67672 35948 50 147 600 1830	92,90 2,55 4 / 2 6 75478 40747 53 171 600 2174	2,61 4 / 2 8 103511 46716 41 170 600 2174	112,79 2,62 4 / 2 8 97902 50827 49 152 600 2174	120,20 2,61 4 / 2 8 97902 53990 55 137 600 2174)
EER n° of scroll compressors / circuits n° of axial fans Air flow Water flow Water pressure drop Water pump available head Water tank Height Lenght Width	m³/h I/h kPa kPa dm³ mm	48,24 2,87 2 / 2 8 39890 23805 49 150 340 1720 3190	48,24 2,87 2 / 1 8 39890 23805 49 150 340 1720 3190	47,79 2,94 4 / 2 8 39890 24143 50 147 340 1720 3540	58,63 2,64 2 / 2 8 39890 26660 42 147 340 1720 3190	58,63 2,64 2 / 1 8 39890 26660 42 147 340 1720 3190	56,04 2,74 4 / 2 8 39890 26378 43 148 340 1720 3540	56,80 2,85 4 / 2 6 67672 27864 46 155 600 1830 3540	70,70 2,64 4 / 2 6 67672 32095 49 133 600 1830 3540	83,30 2,51 4 / 2 6 67672 35948 50 147 600 1830 3540	92,90 2,55 4 / 2 6 75478 40747 53 171 600 2174 3540	104,21 2,61 4 / 2 8 103511 46716 41 170 600 2174 4296	112,79 2,62 4 / 2 8 97902 50827 49 152 600 2174 4296	120,20 2,61 4 / 2 8 97902 53990 55 137 600 2174 4296	?
EER n° of scroll compressors / circuits n° of axial fans Air flow Water flow Water pressure drop Water pump available head Water tank Height Lenght Width Sound power level	m³/h I/h kPa kPa dm³ mm mm	48,24 2,87 2 / 2 8 39890 23805 49 150 340 1720 3190 1185	48,24 2,87 2 / 1 8 39890 23805 49 150 340 1720 3190 1185	47,79 2,94 4 / 2 8 39890 24143 50 147 340 1720 3540 1185	58,63 2,64 2 / 2 8 39890 26660 42 147 340 1720 3190 1185	58,63 2,64 2 / 1 8 39890 26660 42 147 340 1720 3190 1185	56,04 2,74 4 / 2 8 39890 26378 43 148 340 1720 3540 1185	56,80 2,85 4 / 2 6 67672 27864 46 155 600 1830 3540 1654	70,70 2,64 4 / 2 6 67672 32095 49 133 600 1830 3540 1654	83,30 2,51 4 / 2 6 67672 35948 50 147 600 1830 3540 1654	92,90 2,55 4 / 2 6 75478 40747 53 171 600 2174 3540 1654	104,21 2,61 4 / 2 8 103511 46716 41 170 600 2174 4296 1654	112,79 2,62 4 / 2 8 97902 50827 49 152 600 2174 4296 1654	120,20 2,61 4 / 2 8 97902 53990 55 137 600 2174 4296 1654	?
EER n° of scroll compressors / circuits n° of axial fans Air flow Water flow Water pressure drop Water pump available head Water tank Height Lenght	m³/h I/h kPa kPa dm³ mm mm dB(A)	48,24 2,87 2 / 2 8 39890 23805 49 150 340 1720 3190 1185 82	48,24 2,87 2 / 1 8 39890 23805 49 150 340 1720 3190 1185 82	47,79 2,94 4 / 2 8 39890 24143 50 147 340 1720 3540 1185 82	58,63 2,64 2 / 2 8 39890 26660 42 147 340 1720 3190 1185 82	58,63 2,64 2 / 1 8 39890 26660 42 147 340 1720 3190 1185 82	56,04 2,74 4 / 2 8 39890 26378 43 148 340 1720 3540 1185 82	56,80 2,85 4 / 2 6 67672 27864 46 155 600 1830 3540 1654 83	70,70 2,64 4 / 2 6 67672 32095 49 133 600 1830 3540 1654 83	83,30 2,51 4 / 2 6 67672 35948 50 147 600 1830 3540 1654 83	92,90 2,55 4 / 2 6 75478 40747 53 171 600 2174 3540 1654 83	104,21 2,61 4 / 2 8 103511 46716 41 170 600 2174 4296 1654 84	112,79 2,62 4 / 2 8 97902 50827 49 152 600 2174 4296 1654 84	120,20 2,61 4 / 2 8 97902 53990 55 137 600 2174 4296 1654 84	?

LCE package air condensed water chillers and heat pumps

LCE package ai	r condensed wa	ter chi	illers -	LOW	NOISE	execu	tion -	Rated	techni	cal dai	ta				
Approximate thermal output (kW)		45	50	60	70	80		90			100			120	
Efficiency pack		2	2	2	2	2	1	2	4	1	2	4	1	2	T
LCECL		042	052	062	072	082	091	092	094	101	102	104	121	122	Ė
Power supply	V-ph-Hz								-3-50						
Cooling capacity	kW	48,03	52,23	63,70	69,93	77,40	92,94	92,94	94,26	103,36	103,36	102,22	125,11	125,11	1
Total power input	kW	16,18	18,55	21,97	24,67	28,16	32,03	32,03	32,32	38,35	38,35	37,06	44,38	44,38	t
EER		2,97	2,82	2,90	2,83	2,75	2,90	2,90	2,92	2,70	2,70	2,76	2,82	2,82	t
n° of scroll compressors / circuits		2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	4 / 2	2 / 2	2 / 1	4 / 2	2 / 2	2 / 1	t
n° of axial fans		4	4	6	6	6	8	8	8	8	8	8	6	6	t
Air flow	m ³ /h	15398	15398	21955	21955	21955	29393	29393	29393	29393	29393	29393	43434	43434	4
Water flow	l/h	8261	8983	10956	12027	13313	15986	15986	16213	17778	17778	17582	21518	21518	2
Water pressure drop	kPa	27	31	47	35	43	32	32	33	39	39	38	40	40	T
Water pump available head	kPa	157	149	125	131	117	129	129	128	118	118	119	107	107	Ť
Water tank	dm ³	200	200	220	220	220	340	340	340	340	340	340	600	600	t
Height	mm	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1705	1830	1830	t
Lenght	mm	2010	2010	2360	2360	2360	3190	3190	3540	3190	3190	3540	3540	3540	t
Width	mm	1185	1185	1185	1185	1185	1185	1185	1185	1185	1185	1185	1654	1654	t
Sound power level	dB(A)	70	70	72	72	72	73	73	73	73	73	73	77	77	t
Sound pressure level	dB(A)	42	42	44	44	44	45	45	45	45	45	45	49	49	t
Standard unit operating weight	kg	525	525	630	635	700	905	905	980	915	915	980	1260	1260	t
Unit with pump and full tank operating weight	kg	862	862	982	987	1067	1426	1426	1557	1436	1436	1557	2040	2040	t
LCE package air co	ondensed water	chiller	s - L0	W NO	SE exe	ecution	ı - Rat	ed tecl	hnical	data					Ī
Approximate thermal output (kW)			140			160		170	190	210	240	270	290	320	
Efficiency pack		1	2	2	1	2	4	4	4	4	4	4	4	4	1
LCECL		141	142	144	161	162	164	ND	194	214	244	274	294	324	
Power supply	V-ph-Hz							400-3-50)						
Cooling capacity	kW	137,53	137,53	139,79	155,35	155,35	153,68	ND	181,23	211,92	230,32	265,28	287,43	304,36	
Total power input	kW	50,28	50,28	49,73	60,17	60,17	57,57	ND	71,36	79,49	94,45	105,18	114,89	122,91	
EER		2,74	2,74	2,81	2,58	2,58	2,67	ND	2,54	2,67	2,44	2,52	2,50	2,48	
n° of scroll compressors / circuits		2 / 2	2 / 1	4 / 2	2 / 2	2 / 1	4 / 2	ND	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2	1
n° of axial fans		6	6	6	6	6	6	ND	6	6	6	8	8	8	
Air flow	m ³ /h	43434	43434	43434	40235	40235	40235	ND	55808	63261	63261	87186	81687	81687	1
Water flow	l/h	23655	23655	24043	26719	26719	26434	ND	31172	36451	36615	45628	49438	52350	1
Water pressure drop	kPa	48	48	50	43	43	43	ND	47	51	50	39	46	52	1
Water pump available head	kPa	151	151	148	147	147	148	ND	139	143	177	174	158	145	1
Water tank	dm ³	600	600	600	600	600	600	ND	600	600	600	600	600	600	1
Height	mm	1830	1830	1830	1830	1830	1830	ND	1830	2174	2174	2174	2174	2174	1
Lenght	mm	3540	3540	3540	3540	3540	3540	ND	3540	3540	3540	4296	4296	4296	1
Width	mm	1654	1654	1654	1654	1654	1654	ND	1654	1654	1654	1654	1654	1654	1
Sound power level	dB(A)	77	77	77	77	77	77	ND	77	77	78	79	79	79	1
Sound pressure level	dB(A)	49	49	49	49	49	49	ND	49	49	50	51	51	51	1
										4540	4000			40.47	1
Standard unit operating weight	kg	1310	1310	1290	1330	1330	1440	ND	1460	1510	1620	1880	1912	1947	



	densed water ch	illers -	QUIT	E (supe	er low	noise)	execu	tion - I	Rated 1	technic	cal dat	а			
Approximate thermal output (kW)		45	50	60	70	80		90			100			120	
Efficiency pack		2	2	2	2	2	1	2	4	1	2	4	1	2	Ī
LCECQ		042	052	062	072	082	091	092	094	101	102	104	121	122	
Power supply	V-ph-Hz							400	-3-50						
Cooling capacity	kW	48,03	52,23	63,70	69,93	77,40	92,94	92,94	94,26	103,36	103,36	102,22	123,60	123,60)
Total power input	kW	16,18	18,55	21,97	24,67	28,16	32,03	32,03	32,32	38,35	35,38	37,06	45,04	38,35	Ť
EER		2,97	2,82	2,90	2,83	2,75	2,90	2,90	2,92	2,70	2,92	2,76	2,74	3,22	Ť
n° of scroll compressors / circuits		2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 2	2 / 1	4 / 2	2 / 2	2 / 1	4 / 2	2 / 2	2 / 1	T
n° of axial fans		4	4	6	6	6	8	8	8	8	8	8	6	6	T
Air flow	m ³ /h	15398	15398	21955	21955	21955	29393	29393	29393	29393	29393	29393	35930	35930	1
Water flow	I/h	8261	8983	10956	12027	13313	15986	15986	16213	17778	17778	17582	21259	21259	
Water pressure drop	kPa	27	31	47	35	43	32	32	33	39	39	38	39	39	Ť
Water pump available head	kPa	157	149	125	131	117	129	129	128	118	118	119	109	109	t
Water tank	dm ³	200	200	220	220	220	340	340	340	340	340	340	600	600	t
Height	mm	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1830	1830	
Lenght	mm	2010	2010	2360	2360	2360	3190	3190	3540	3190	3190	3540	3540	3540	T
Width	mm	1185	1185	1185	1185	1185	1185	1185	1185	1185	1185	1185	1654	1654	T
Sound power level	dB(A)	67	67	69	69	69	70	70	70	70	70	70	69	69	T
Sound pressure level	dB(A)	39	39	41	41	41	42	42	42	42	42	42	41	41	İ
Standard unit operating weight	kg	525	525	630	635	700	905	905	980	915	915	980	1260	1260	
Unit with pump and full tank operating weight	kg	862	862	982	987	1067	1426	1426	1557	1436	1436	1557	2040	2040	T
LCE package air conden	sed water chille	rs - Ol	IIITE (e	a. I											
			DITE (9	super i	ow noi	se) exe	ecutior	ı - Rat	ed tecl	hnical	data				
Approximate thermal output (kW)		, Q	140	super i	ow noi	160	ecutior	1 - Rat	ed tec 190	nnical 210	data 240	270	290	320	
***************************************		1	<u> </u>	2 2	ow noi		ecution 4					270 4	290	320 4	
Efficiency pack			140			160		170	190	210	240				
Efficiency pack LCECQ	V-ph-Hz	1	140	2	1	160	4	170 4	190 4 194	210 4	240 4	4	4	4	
Efficiency pack LCECQ Power supply		1	140	2	1	160	4	170 4 ND	190 4 194	210 4	240 4	4	4	4	
Efficiency pack LCECQ Power supply Cooling capacity	V-ph-Hz	1 141	140 2 142	2 144	1 161	160 2 162	4 164	170 4 ND 400-3-50	190 4 194	210 4 214	240 4 244	4 274	4 294	4 324	
Efficiency pack LCECQ Power supply Cooling capacity Total power input	V-ph-Hz kW	1 141 135,48	140 2 142 135,48	2 144 137,60	1 161 151,46	160 2 162 151,46	4 164 150,10	170 4 ND 400-3-50 ND	190 4 194 0 164,43	210 4 214 192,65	240 4 244 209,62	4 274 260,68	4 294 278,71	4 324 293,81	
Efficiency pack LCECQ Power supply Cooling capacity Total power input EER	V-ph-Hz kW	1 141 135,48 51,14	140 2 142 135,48 51,14	2 144 137,60 50,82	1 161 151,46 61,96	160 2 162 151,46 61,96	4 164 150,10 59,37	170 4 ND 400-3-50 ND ND	190 4 194 0 164,43 81,13	210 4 214 192,65 90,77	240 4 244 209,62 98,73	4 274 260,68 105,56	4 294 278,71 117,26	4 324 293,81 126,09	
Efficiency pack LCECO Power supply Cooling capacity Total power input EER n° of scroll compressors / circuits	V-ph-Hz kW	1 141 135,48 51,14 2,65	140 2 142 135,48 51,14 2,65	2 144 137,60 50,82 2,71	1 161 151,46 61,96 2,44	160 2 162 151,46 61,96 2,44	4 164 150,10 59,37 2,53	170 4 ND 400-3-50 ND ND	190 4 194 0 164,43 81,13 2,03	210 4 214 192,65 90,77 2,12	240 4 244 209,62 98,73 2,12	274 260,68 105,56 2,47	294 278,71 117,26 2,38	4 324 293,81 126,09 2,33	
Efficiency pack LCECQ Power supply Cooling capacity Total power input EER n° of scroll compressors / circuits n° of axial fans	V-ph-Hz kW	1 141 135,48 51,14 2,65 2 / 2	140 2 142 135,48 51,14 2,65 2 / 1	2 144 137,60 50,82 2,71 4 / 2	1 161 151,46 61,96 2,44 2 / 2	160 2 162 151,46 61,96 2,44 2 / 1	4 164 150,10 59,37 2,53 4 / 2	170 4 ND 400-3-50 ND ND ND	190 4 194 0 164,43 81,13 2,03 4 / 2	210 4 214 192,65 90,77 2,12 4 / 2	240 4 244 209,62 98,73 2,12 4 / 2	260,68 105,56 2,47 4 / 2	278,71 117,26 2,38 4 / 2	293,81 126,09 2,33 4 / 2	
Efficiency pack LCECQ Power supply Cooling capacity Total power input EER n° of scroll compressors / circuits n° of axial fans Air flow	V-ph-Hz kW kW	1 141 135,48 51,14 2,65 2 / 2 6	140 2 142 135,48 51,14 2,65 2 / 1 6	2 144 137,60 50,82 2,71 4 / 2 6	1 161 151,46 61,96 2,44 2 / 2 6	160 2 162 151,46 61,96 2,44 2 / 1 6	4 164 150,10 59,37 2,53 4 / 2 6	170 4 ND 400-3-50 ND ND ND ND	190 4 194 0 164,43 81,13 2,03 4 / 2 6	210 4 214 192,65 90,77 2,12 4 / 2 6	240 4 244 209,62 98,73 2,12 4 / 2 6	4 274 260,68 105,56 2,47 4 / 2 8	278,71 117,26 2,38 4 / 2 8	293,81 126,09 2,33 4 / 2	
Efficiency pack LCECQ Power supply Cooling capacity Total power input EER n° of scroll compressors / circuits n° of axial fans Air flow Water flow	V-ph-Hz kW kW	1 141 135,48 51,14 2,65 2 / 2 6 35930	140 2 142 135,48 51,14 2,65 2 / 1 6 35930	2 144 137,60 50,82 2,71 4 / 2 6 35930	1 161 151,46 61,96 2,44 2 / 2 6 35930	160 2 162 151,46 61,96 2,44 2 / 1 6 35930	4 164 150,10 59,37 2,53 4 / 2 6 35930	170 4 ND 400-3-50 ND ND ND ND ND	190 4 194 0 164,43 81,13 2,03 4 / 2 6 35930	210 4 214 192,65 90,77 2,12 4 / 2 6 40953	240 4 244 209,62 98,73 2,12 4 / 2 6 40953	4 274 260,68 105,56 2,47 4 / 2 8 69835	278,71 117,26 2,38 4 / 2 8 69835	293,81 126,09 2,33 4 / 2 8 69835	
Efficiency pack LCECQ Power supply Cooling capacity Total power input EER n° of scroll compressors / circuits n° of axial fans Air flow Water flow Water pressure drop	V-ph-Hz kW kW	1 141 135,48 51,14 2,65 2 / 2 6 35930 23303	140 2 142 135,48 51,14 2,65 2 / 1 6 35930 23303	2 144 137,60 50,82 2,71 4 / 2 6 35930 23667	1 161 151,46 61,96 2,44 2 / 2 6 35930 26051	160 2 162 151,46 61,96 2,44 2 / 1 6 35930 26051	4 164 150,10 59,37 2,53 4 / 2 6 35930 25816	170 4 ND 400-3-50 ND ND ND ND ND ND	190 4 194 0 164,43 81,13 2,03 4 / 2 6 35930 28282	210 4 214 192,65 90,77 2,12 4 / 2 6 40953 33135	240 4 244 209,62 98,73 2,12 4 / 2 6 40953 36054	4 274 260,68 105,56 2,47 4 / 2 8 69835 44837	4 294 278,71 117,26 2,38 4 / 2 8 69835 47938	4 324 293,81 126,09 2,33 4 / 2 8 69835 50535	
Efficiency pack LCECQ Power supply Cooling capacity Total power input EER n° of scroll compressors / circuits n° of axial fans Air flow Water flow Water pressure drop Water pump available head	V-ph-Hz kW kW m ³ /h l/h kPa	1 141 135,48 51,14 2,65 2 / 2 6 35930 23303 47	140 2 142 135,48 51,14 2,65 2 / 1 6 35930 23303 47	2 144 137,60 50,82 2,71 4 / 2 6 35930 23667 48	1 161 151,46 61,96 2,44 2 / 2 6 35930 26051 41	160 2 162 151,46 61,96 2,44 2 / 1 6 35930 26051 41	4 164 150,10 59,37 2,53 4 / 2 6 35930 25816 40	170 4 ND 400-3-50 ND ND ND ND ND ND ND	190 4 194 0 164,43 81,13 2,03 4 / 2 6 35930 28282 39	210 4 214 192,65 90,77 2,12 4 / 2 6 40953 33135 39	240 4 244 209,62 98,73 2,12 4 / 2 6 40953 36054 42	4 274 260,68 105,56 2,47 4 / 2 8 69835 44837 38	278,71 117,26 2,38 4 / 2 8 69835 47938 44	4 324 293,81 126,09 2,33 4 / 2 8 69835 50535 48	
Efficiency pack LCECO Power supply Cooling capacity Total power input EER n° of scroll compressors / circuits n° of axial fans Air flow Water flow Water pressure drop Water pump available head Water tank	V-ph-Hz kW kW m³/h l/h kPa kPa	1 141 135,48 51,14 2,65 2 / 2 6 35930 23303 47 153	140 2 142 135,48 51,14 2,65 2 / 1 6 35930 23303 47 153	2 144 137,60 50,82 2,71 4 / 2 6 35930 23667 48 151	1 161 151,46 61,96 2,44 2 / 2 6 35930 26051 41 151	160 2 162 151,46 61,96 2,44 2 / 1 6 35930 26051 41 151	4 164 150,10 59,37 2,53 4 / 2 6 35930 25816 40 152	170 4 ND 400-3-50 ND ND ND ND ND ND ND ND ND	190 4 194 164,43 81,13 2,03 4 / 2 6 35930 28282 39 161	210 4 214 192,65 90,77 2,12 4 / 2 6 40953 33135 39 171	240 4 244 209,62 98,73 2,12 4 / 2 6 40953 36054 42 193	4 274 260,68 105,56 2,47 4 / 2 8 69835 44837 38 177	278,71 117,26 2,38 4 / 2 8 69835 47938 44 164	4 324 293,81 126,09 2,33 4 / 2 8 69835 50535 48 153	
Efficiency pack LCECQ Power supply Cooling capacity Total power input EER n° of scroll compressors / circuits n° of axial fans Air flow Water flow Water pressure drop Water pump available head Water tank Height	V-ph-Hz kW kW m ³ /h l/h kPa kPa dm ³	1 141 135,48 51,14 2,65 2 / 2 6 35930 23303 47 153 600	140 2 142 135,48 51,14 2,65 2 / 1 6 35930 23303 47 153 600	2 144 137,60 50,82 2,71 4 / 2 6 35930 23667 48 151 600	1 151,46 61,96 2,44 2 / 2 6 35930 26051 41 151 600	160 2 162 151,46 61,96 2,44 2 / 1 6 35930 26051 41 151 600	4 164 150,10 59,37 2,53 4 / 2 6 35930 25816 40 152 600	170 4 ND 400-3-50 ND ND ND ND ND ND ND ND ND ND	190 4 194 164,43 81,13 2,03 4 / 2 6 35930 28282 39 161 600	210 4 214 192,65 90,77 2,12 4 / 2 6 40953 33135 39 171 600	240 4 244 209,62 98,73 2,12 4 / 2 6 40953 36054 42 193 600	260,68 105,56 2,47 4 / 2 8 69835 44837 38 177 600	278,71 117,26 2,38 4 / 2 8 69835 47938 44 164 600	293,81 126,09 2,33 4 / 2 8 69835 50535 48 153 600	
Efficiency pack LCECQ Power supply Cooling capacity Total power input EER n° of scroll compressors / circuits n° of axial fans Air flow Water flow Water pressure drop Water pump available head Water tank Height Lenght	V-ph-Hz kW kW m³/h l/h kPa kPa dm³ mm	1 141 135,48 51,14 2,65 2 / 2 6 35930 23303 47 153 600 1830	140 2 142 135,48 51,14 2,65 2 / 1 6 35930 23303 47 153 600 1830	2 144 137,60 50,82 2,71 4 / 2 6 35930 23667 48 151 600 1830	1 161 151,46 61,96 2,44 2 / 2 6 35930 26051 41 151 600 1830	160 2 162 151,46 61,96 2,44 2 / 1 6 35930 26051 41 151 600 1830	4 164 150,10 59,37 2,53 4 / 2 6 35930 25816 40 152 600 1830	170 4 ND 400-3-50 ND	190 4 194 164,43 81,13 2,03 4 / 2 6 35930 28282 39 161 600 1830	210 4 214 192,65 90,77 2,12 4 / 2 6 40953 33135 39 171 600 2174	240 4 244 209,62 98,73 2,12 4 / 2 6 40953 36054 42 193 600 2174	4 274 260,68 105,56 2,47 4 / 2 8 69835 44837 38 177 600 2174	278,71 117,26 2,38 4 / 2 8 69835 47938 44 164 600 2174	293,81 126,09 2,33 4 / 2 8 69835 50535 48 153 600 2174	
Efficiency pack LCECQ Power supply Cooling capacity Total power input EER n° of scroll compressors / circuits n° of axial fans Air flow Water flow Water pressure drop Water pump available head Water tank Height Lenght Width	V-ph-Hz kW kW m³/h l/h kPa kPa dm³ mm	1 141 135,48 51,14 2,65 2 / 2 6 35930 23303 47 153 600 1830 3540	140 2 142 135,48 51,14 2,65 2 / 1 6 35930 23303 47 153 600 1830 3540	2 144 137,60 50,82 2,71 4 / 2 6 35930 23667 48 151 600 1830 3540	1 161 151,46 61,96 2,44 2 / 2 6 35930 26051 41 151 600 1830 3540	160 2 162 151,46 61,96 2,44 2 / 1 6 35930 26051 41 151 600 1830 3540	4 164 150,10 59,37 2,53 4 / 2 6 35930 25816 40 152 600 1830 3540	170 4 ND 400-3-56 ND	190 4 194 164,43 81,13 2,03 4 / 2 6 35930 28282 39 161 600 1830 3540	210 4 214 192,65 90,77 2,12 4 / 2 6 40953 33135 39 171 600 2174 3540	240 4 244 209,62 98,73 2,12 4 / 2 6 40953 36054 42 193 600 2174 3540	4 274 260,68 105,56 2,47 4 / 2 8 69835 44837 38 177 600 2174 4296	4 294 278,71 117,26 2,38 4 / 2 8 69835 47938 44 164 600 2174 4296	4 324 293,81 126,09 2,33 4 / 2 8 69835 50535 48 153 600 2174 4296	
Efficiency pack LCECQ Power supply Cooling capacity Total power input EER n° of scroll compressors / circuits n° of axial fans Air flow Water flow Water pressure drop Water pump available head Water tank Height Lenght Width Sound power level	V-ph-Hz kW kW m³/h l/h kPa kPa dm³ mm mm	1 141 135,48 51,14 2,65 2 / 2 6 35930 23303 47 153 600 1830 3540 1654	140 2 142 135,48 51,14 2,65 2 / 1 6 35930 23303 47 153 600 1830 3540 1654	2 144 137,60 50,82 2,71 4 / 2 6 35930 23667 48 151 600 1830 3540 1654	1 161 151,46 61,96 2,44 2 / 2 6 35930 26051 41 151 600 1830 3540 1654	160 2 162 151,46 61,96 2,44 2 / 1 6 35930 26051 41 151 600 1830 3540 1654	4 164 150,10 59,37 2,53 4 / 2 6 35930 25816 40 152 600 1830 3540 1654	170 4 ND 400-3-51 ND ND ND ND ND ND ND ND ND ND	190 4 194 164,43 81,13 2,03 4 / 2 6 35930 28282 39 161 600 1830 3540 1654	210 4 214 192,65 90,77 2,12 4 / 2 6 40953 33135 39 171 600 2174 3540 1654	240 4 244 209,62 98,73 2,12 4 / 2 6 40953 36054 42 193 600 2174 3540 1654	4 274 260,68 105,56 2,47 4 / 2 8 69835 44837 38 177 600 2174 4296 1654	4 294 278,71 117,26 2,38 4 / 2 8 69835 47938 44 164 600 2174 4296 1654	4 324 293,81 126,09 2,33 4 / 2 8 69835 50535 48 153 600 2174 4296 1654	
Approximate thermal output (kW) Efficiency pack LCECQ Power supply Cooling capacity Total power input EER n° of scroll compressors / circuits n° of axial fans Air flow Water flow Water pressure drop Water pump available head Water tank Height Lenght Width Sound power level Sound pressure level Standard unit operating weight	V-ph-Hz kW kW m³/h l/h kPa kPa dm³ mm mm mm	1 141 135,48 51,14 2,65 2 / 2 6 35930 23303 47 153 600 1830 3540 1654 69	140 2 142 135,48 51,14 2,65 2 / 1 6 35930 23303 47 153 600 1830 3540 1654 69	2 144 137,60 50,82 2,71 4 / 2 6 35930 23667 48 151 600 1830 3540 1654 69	1 161 151,46 61,96 2,44 2 / 2 6 35930 26051 41 151 600 1830 3540 1654 69	160 2 162 151,46 61,96 2,44 2 / 1 6 35930 26051 41 151 600 1830 3540 1654 69	4 164 150,10 59,37 2,53 4 / 2 6 35930 25816 40 152 600 1830 3540 1654 69	170 4 ND 400-3-5i ND ND ND ND ND ND ND ND ND ND	190 4 194 194 164,43 81,13 2,03 4 / 2 6 35930 28282 39 161 600 1830 3540 1654 69	210 4 214 192,65 90,77 2,12 4 / 2 6 40953 33135 39 171 600 2174 3540 1654 69	240 4 244 209,62 98,73 2,12 4 / 2 6 40953 36054 42 193 600 2174 3540 1654 69	4 274 260,68 105,56 2,47 4 / 2 8 69835 44837 38 177 600 2174 4296 1654 70	4 294 278,71 117,26 2,38 4 / 2 8 69835 47938 44 164 600 2174 4296 1654 70	4 324 293,81 126,09 2,33 4 / 2 8 69835 50535 48 153 600 2174 4296 1654 70	

Air/water r	reversible	heat p	umps	STAN	IDARD	execu	tion -	Rated :	techni	cal dat	a			
Approximate thermal output (kW)		45	50	60	70	80		90			100			120
Efficiency pack		2	2	2	2	2	1	2	4	1	2	4	1	2
LCEHS		042	052	062	072	082	091	092	094	101	102	104	121	122
Power supply	V-ph-Hz	072	002	002	UIL	002	031		-3-50	101	102	104	141	1122
Cooling capacity	kW	ND	ND	63,30	69,20	76,50	92,20	92,20	ND	102,70	102,70	ND	124,10	124,10
Total power input	kW	ND	ND	22,57	25,36	28,97	33,05	33,05	ND	39,46	39,46	ND	43,13	43,14
EER		ND	ND	2,80	2,73	2,64	2,79	2,79	ND	2,60	2,60	ND	2,88	2,88
Heating capacity	kW	ND	ND	70,20	77,60	85,20	101,60	101,60	ND	118,20	118,20	ND	138,10	138,10
Heating mode total power input	kW	ND	ND	21,48	24,40	27,40	32,80	32,80	ND	37,80	37,80	ND	43,10	43,10
COP		ND	ND	3,27	3,18	3,11	3,10	3,10	ND	3,13	3,13	ND	3,20	3,20
n° of scroll compressors / circuits		ND	ND	2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	ND	2 / 2	2 / 1	ND	2 / 2	2 / 1
n° of axial fans		ND	ND	4	4	4	6	6	ND	6	6	ND	8	8
Air flow	m ³ /h	ND	ND	21379	21379	21379	30913	30913	ND	30913	30913	ND	41340	41340
Cooling operation Water flow	I/h	ND	ND	10887	11902	13158	15858	15858	ND	17665	17665	ND	21346	21346
Cooling operation water pressure drop	kPa	ND	ND	46	34	42	31	31	ND	38	38	ND	39	39
Water pump available head	kPa	ND	ND	126	133	119	130	130	ND	119	119	ND	108	108
Water tank	dm ³	ND	ND	200	200	200	220	220	ND	220	220	ND	340	340
Height	mm	ND	ND	1720	1720	1720	1720	1720	ND	1720	1720	ND	1720	1720
Lenght	mm	ND	ND	2010	2010	2010	2360	2360	ND	2360	2360	ND	3190	3190
Width	mm	ND	ND	1185	1185	1185	1185	1185	ND	1185	1185	ND	1185	1185
Sound power elvel	dB(A)	ND	ND	80	80	80	82	82	ND	82	82	ND	82	82
Sound pressure level	dB(A)	ND	ND	52	52	52	54	54	ND	54	54	ND	54	54
Standard unit operating weight	kg	ND	ND	540	570	650	730	730	ND	730	730	ND	1010	1010
Unit with pump and full tank operating weight	kg	ND	ND	8747	907	987	1138	1138	ND	1138	1138	ND	1581	1581
	_										1100	NB	1001	1001
Air/water reve	ersible nea	it pum		IANDA	KD ex		n - Kat	•		•				
Approximate thermal output (kW)			140			160		170	190	210	240	270	290	320
Efficiency pack		1	2	2	1	2	4	4	4	4	4	4	4	4
LCEHS		141	142	144	161	460	164	174	194	214	244	274	294	201
	IV ph Uz				101	162				214			L JT	324
	V-ph-Hz		1					400-3-50						
Cooling capacity	kW	138,40	138,40	140,37	155,00	155,00	153,36	162,00	186,60	209,00	236,90	271,60	295,50	313,90
Cooling capacity Total power input		48,24	48,24	140,37 47,79	155,00 58,63	155,00 58,63	153,36 56,04	162,00 56,80	186,60 70,70	209,00	236,90 92,90	271,60 104,21	295,50 112,79	313,90 120,20
Cooling capacity Total power input	kW	48,24	48,24 2,87	140,37 47,79 2,94	155,00 58,63 2,64	155,00 58,63 2,64	153,36 56,04 2,74	162,00 56,80 2,85	186,60 70,70 2,64	209,00 83,30 2,51	236,90 92,90 2,55	271,60 104,21 2,61	295,50 112,79 2,62	313,90 120,20 2,61
Cooling capacity Total power input EER Heating capacity	kW kW	48,24 2,87 153,30	48,24 2,87 153,30	140,37 47,79 2,94 150,23	155,00 58,63 2,64 179,80	155,00 58,63 2,64 179,80	153,36 56,04 2,74 176,20	162,00 56,80 2,85 188,30	186,60 70,70 2,64 212,40	209,00 83,30 2,51 235,60	236,90 92,90 2,55 272,50	271,60 104,21 2,61 307,20	295,50 112,79 2,62 329,80	313,90 120,20 2,61 350,80
Cooling capacity Total power input EER Heating capacity Heating mode total power input	kW	48,24 2,87 153,30 46,80	48,24 2,87 153,30 46,80	140,37 47,79 2,94 150,23 46,33	155,00 58,63 2,64 179,80 55,60	155,00 58,63 2,64 179,80 55,60	153,36 56,04 2,74 176,20 55,04	162,00 56,80 2,85 188,30 55,60	186,60 70,70 2,64 212,40 65,20	209,00 83,30 2,51 235,60 73,00	236,90 92,90 2,55 272,50 85,12	271,60 104,21 2,61 307,20 95,86	295,50 112,79 2,62 329,80 104,20	313,90 120,20 2,61 350,80 112,60
Cooling capacity Total power input EER Heating capacity Heating mode total power input COP	kW kW	48,24 2,87 153,30 46,80 3,28	48,24 2,87 153,30 46,80 3,28	140,37 47,79 2,94 150,23 46,33 3,24	155,00 58,63 2,64 179,80 55,60 3,23	155,00 58,63 2,64 179,80 55,60 3,23	153,36 56,04 2,74 176,20 55,04 3,20	162,00 56,80 2,85 188,30 55,60 3,39	186,60 70,70 2,64 212,40 65,20 3,26	209,00 83,30 2,51 235,60 73,00 3,23	236,90 92,90 2,55 272,50 85,12 3,20	271,60 104,21 2,61 307,20 95,86 3,20	295,50 112,79 2,62 329,80 104,20 3,17	313,90 120,20 2,61 350,80 112,60 3,12
Cooling capacity Total power input EER Heating capacity Heating mode total power input COP n° of scroll compressors / circuits	kW kW	48,24 2,87 153,30 46,80 3,28 2 / 2	48,24 2,87 153,30 46,80 3,28 2 / 1	140,37 47,79 2,94 150,23 46,33 3,24 4 / 2	155,00 58,63 2,64 179,80 55,60 3,23 2 / 2	155,00 58,63 2,64 179,80 55,60 3,23 2 / 1	153,36 56,04 2,74 176,20 55,04 3,20 4 / 2	162,00 56,80 2,85 188,30 55,60 3,39 4 / 2	186,60 70,70 2,64 212,40 65,20 3,26 4 / 2	209,00 83,30 2,51 235,60 73,00 3,23 4 / 2	236,90 92,90 2,55 272,50 85,12 3,20 4 / 2	271,60 104,21 2,61 307,20 95,86 3,20 4 / 2	295,50 112,79 2,62 329,80 104,20 3,17 4 / 2	313,90 120,20 2,61 350,80 112,60 3,12 4 / 2
Power supply Cooling capacity Total power input EER Heating capacity Heating mode total power input COP n° of scroll compressors / circuits n° of axial fans	kW kW kW	48,24 2,87 153,30 46,80 3,28 2 / 2 8	48,24 2,87 153,30 46,80 3,28 2 / 1 8	140,37 47,79 2,94 150,23 46,33 3,24 4 / 2	155,00 58,63 2,64 179,80 55,60 3,23 2 / 2	155,00 58,63 2,64 179,80 55,60 3,23 2 / 1	153,36 56,04 2,74 176,20 55,04 3,20 4 / 2	162,00 56,80 2,85 188,30 55,60 3,39 4 / 2 6	186,60 70,70 2,64 212,40 65,20 3,26 4 / 2 6	209,00 83,30 2,51 235,60 73,00 3,23 4 / 2	236,90 92,90 2,55 272,50 85,12 3,20 4 / 2	271,60 104,21 2,61 307,20 95,86 3,20 4 / 2	295,50 112,79 2,62 329,80 104,20 3,17 4 / 2	313,90 120,20 2,61 350,80 112,60 3,12 4 / 2
Cooling capacity Total power input EER Heating capacity Heating mode total power input COP n° of scroll compressors / circuits n° of axial fans Air flow	kW kW kW kW	48,24 2,87 153,30 46,80 3,28 2 / 2 8 39890	48,24 2,87 153,30 46,80 3,28 2 / 1 8 39890	140,37 47,79 2,94 150,23 46,33 3,24 4 / 2 8 39890	155,00 58,63 2,64 179,80 55,60 3,23 2 / 2 8 39890	155,00 58,63 2,64 179,80 55,60 3,23 2 / 1 8 39890	153,36 56,04 2,74 176,20 55,04 3,20 4 / 2 8 39890	162,00 56,80 2,85 188,30 55,60 3,39 4 / 2 6 67672	186,60 70,70 2,64 212,40 65,20 3,26 4 / 2 6 67672	209,00 83,30 2,51 235,60 73,00 3,23 4 / 2 6 67672	236,90 92,90 2,55 272,50 85,12 3,20 4 / 2 6 75478	271,60 104,21 2,61 307,20 95,86 3,20 4 / 2 8 103511	295,50 112,79 2,62 329,80 104,20 3,17 4 / 2 8 97902	313,90 120,20 2,61 350,80 112,60 3,12 4 / 2 8 97902
Cooling capacity Total power input EER Heating capacity Heating mode total power input COP n° of scroll compressors / circuits n° of axial fans Air flow Cooling operation Water flow	kW kW kW kW	48,24 2,87 153,30 46,80 3,28 2 / 2 8 39890 23805	48,24 2,87 153,30 46,80 3,28 2 / 1 8 39890 23805	140,37 47,79 2,94 150,23 46,33 3,24 4 / 2 8 39890 24143	155,00 58,63 2,64 179,80 55,60 3,23 2 / 2 8 39890 26660	155,00 58,63 2,64 179,80 55,60 3,23 2 / 1 8 39890 26660	153,36 56,04 2,74 176,20 55,04 3,20 4 / 2 8 39890 26378	162,00 56,80 2,85 188,30 55,60 3,39 4 / 2 6 67672 27864	186,60 70,70 2,64 212,40 65,20 3,26 4 / 2 6 67672 32095	209,00 83,30 2,51 235,60 73,00 3,23 4 / 2 6 67672 35948	236,90 92,90 2,55 272,50 85,12 3,20 4 / 2 6 75478 40747	271,60 104,21 2,61 307,20 95,86 3,20 4 / 2 8 103511 46716	295,50 112,79 2,62 329,80 104,20 3,17 4 / 2 8 97902 50827	313,90 120,20 2,61 350,80 112,60 3,12 4 / 2 8 97902 53990
Cooling capacity Total power input EER Heating capacity Heating mode total power input COP n° of scroll compressors / circuits n° of axial fans Air flow Cooling operation Water flow Cooling operation water pressure drop	kW kW kW kW	48,24 2,87 153,30 46,80 3,28 2 / 2 8 39890 23805 49	48,24 2,87 153,30 46,80 3,28 2 / 1 8 39890 23805 49	140,37 47,79 2,94 150,23 46,33 3,24 4 / 2 8 39890 24143 50	155,00 58,63 2,64 179,80 55,60 3,23 2 / 2 8 39890 26660 42	155,00 58,63 2,64 179,80 55,60 3,23 2 / 1 8 39890 26660 42	153,36 56,04 2,74 176,20 55,04 3,20 4 / 2 8 39890 26378 43	162,00 56,80 2,85 188,30 55,60 3,39 4 / 2 6 67672 27864 46	186,60 70,70 2,64 212,40 65,20 3,26 4 / 2 6 67672 32095 49	209,00 83,30 2,51 235,60 73,00 3,23 4 / 2 6 67672 35948 50	236,90 92,90 2,55 272,50 85,12 3,20 4 / 2 6 75478 40747 53	271,60 104,21 2,61 307,20 95,86 3,20 4 / 2 8 103511 46716 41	295,50 112,79 2,62 329,80 104,20 3,17 4 / 2 8 97902 50827 49	313,90 120,20 2,61 350,80 112,60 3,12 4 / 2 8 97902 53990 55
Cooling capacity Total power input EER Heating capacity Heating mode total power input COP n° of scroll compressors / circuits n° of axial fans Air flow Cooling operation Water flow Cooling operation water pressure drop Water pump available head	kW kW kW kW hW kW kW kW kW kW kPa kPa	48,24 2,87 153,30 46,80 3,28 2 / 2 8 39890 23805 49	48,24 2,87 153,30 46,80 3,28 2 / 1 8 39890 23805 49 150	140,37 47,79 2,94 150,23 46,33 3,24 4 / 2 8 39890 24143 50 147	155,00 58,63 2,64 179,80 55,60 3,23 2 / 2 8 39890 26660 42 147	155,00 58,63 2,64 179,80 55,60 3,23 2 / 1 8 39890 26660 42 147	153,36 56,04 2,74 176,20 55,04 3,20 4 / 2 8 39890 26378 43 148	162,00 56,80 2,85 188,30 55,60 3,39 4 / 2 6 67672 27864 46 155	186,60 70,70 2,64 212,40 65,20 3,26 4 / 2 6 67672 32095 49 133	209,00 83,30 2,51 235,60 73,00 3,23 4 / 2 6 67672 35948 50 147	236,90 92,90 2,55 272,50 85,12 3,20 4 / 2 6 75478 40747 53 171	271,60 104,21 2,61 307,20 95,86 3,20 4 / 2 8 103511 46716 41 170	295,50 112,79 2,62 329,80 104,20 3,17 4 / 2 8 97902 50827 49 152	313,90 120,20 2,61 350,80 112,60 3,12 4 / 2 8 97902 53990 55 137
Cooling capacity Total power input EER Heating capacity Heating mode total power input COP n° of scroll compressors / circuits n° of axial fans Air flow Cooling operation Water flow Cooling operation water pressure drop Water pump available head Water tank	kW kW kW hW kW hW kW hV kPa	48,24 2,87 153,30 46,80 3,28 2 / 2 8 39890 23805 49 150 340	48,24 2,87 153,30 46,80 3,28 2 / 1 8 39890 23805 49 150 340	140,37 47,79 2,94 150,23 46,33 3,24 4 / 2 8 39890 24143 50 147 340	155,00 58,63 2,64 179,80 55,60 3,23 2 / 2 8 39890 26660 42 147 340	155,00 58,63 2,64 179,80 55,60 3,23 2 / 1 8 39890 26660 42 147 340	153,36 56,04 2,74 176,20 55,04 3,20 4 / 2 8 39890 26378 43 148 340	162,00 56,80 2,85 188,30 55,60 3,39 4 / 2 6 67672 27864 46 155 600	186,60 70,70 2,64 212,40 65,20 3,26 4 / 2 6 67672 32095 49 133 600	209,00 83,30 2,51 235,60 73,00 3,23 4 / 2 6 67672 35948 50 147 600	236,90 92,90 2,55 272,50 85,12 3,20 4 / 2 6 75478 40747 53 171 600	271,60 104,21 2,61 307,20 95,86 3,20 4 / 2 8 103511 46716 41 170 600	295,50 112,79 2,62 329,80 104,20 3,17 4 / 2 8 97902 50827 49 152 600	313,90 120,20 2,61 350,80 112,60 3,12 4 / 2 8 97902 53990 55 137 600
Cooling capacity Total power input EER Heating capacity Heating mode total power input COP n° of scroll compressors / circuits n° of axial fans Air flow Cooling operation Water flow Cooling operation water pressure drop Water pump available head Water tank Height	kW kW kW kW hW kW kW kW kW kW kPa kPa	48,24 2,87 153,30 46,80 3,28 2 / 2 8 39890 23805 49 150 340 1720	48,24 2,87 153,30 46,80 3,28 2 / 1 8 39890 23805 49 150 340 1720	140,37 47,79 2,94 150,23 46,33 3,24 4 / 2 8 39890 24143 50 147 340 1720	155,00 58,63 2,64 179,80 55,60 3,23 2 / 2 8 39890 26660 42 147 340	155,00 58,63 2,64 179,80 55,60 3,23 2 / 1 8 39890 26660 42 147 340 1720	153,36 56,04 2,74 176,20 55,04 3,20 4 / 2 8 39890 26378 43 148 340 1720	162,00 56,80 2,85 188,30 55,60 3,39 4 / 2 6 67672 27864 46 155 600 1830	186,60 70,70 2,64 212,40 65,20 3,26 4 / 2 6 67672 32095 49 133 600 1830	209,00 83,30 2,51 235,60 73,00 3,23 4 / 2 6 67672 35948 50 147 600	236,90 92,90 2,55 272,50 85,12 3,20 4 / 2 6 75478 40747 53 171 600 2174	271,60 104,21 2,61 307,20 95,86 3,20 4 / 2 8 103511 46716 41 170 600 2174	295,50 112,79 2,62 329,80 104,20 3,17 4 / 2 8 97902 50827 49 152 600 2174	313,90 120,20 2,61 350,80 112,60 3,12 4 / 2 8 97902 53990 55 137 600 2174
Cooling capacity Total power input EER Heating capacity Heating mode total power input COP n° of scroll compressors / circuits n° of axial fans Air flow Cooling operation Water flow Cooling operation water pressure drop Water pump available head Water tank Height Lenght	kW kW kW kW	48,24 2,87 153,30 46,80 3,28 2 / 2 8 39890 23805 49 150 340 1720 3190	48,24 2,87 153,30 46,80 3,28 2 / 1 8 39890 23805 49 150 340 1720 3190	140,37 47,79 2,94 150,23 46,33 3,24 4 / 2 8 39890 24143 50 147 340 1720 3540	155,00 58,63 2,64 179,80 55,60 3,23 2 / 2 8 39890 26660 42 147 340 1720 3190	155,00 58,63 2,64 179,80 55,60 3,23 2 / 1 8 39890 26660 42 147 340 1720 3190	153,36 56,04 2,74 176,20 55,04 3,20 4 / 2 8 39890 26378 43 148 340 1720 3540	162,00 56,80 2,85 188,30 55,60 3,39 4 / 2 6 67672 27864 46 155 600 1830 3540	186,60 70,70 2,64 212,40 65,20 3,26 4 / 2 6 67672 32095 49 133 600 1830 3540	209,00 83,30 2,51 235,60 73,00 3,23 4 / 2 6 67672 35948 50 147 600 1830 3540	236,90 92,90 2,55 272,50 85,12 3,20 4 / 2 6 75478 40747 53 171 600 2174 3540	271,60 104,21 2,61 307,20 95,86 3,20 4 / 2 8 103511 46716 41 170 600 2174 4296	295,50 112,79 2,62 329,80 104,20 3,17 4 / 2 8 97902 50827 49 152 600 2174 4296	313,90 120,20 2,61 350,80 112,60 3,12 4 / 2 8 97902 53990 55 137 600 2174 4296
Cooling capacity Total power input EER Heating capacity Heating mode total power input COP n° of scroll compressors / circuits n° of axial fans Air flow Cooling operation Water flow Cooling operation water pressure drop Water pump available head Water tank Height Lenght	kW kW kW kW m³/h l/h kPa kPa dm³	48,24 2,87 153,30 46,80 3,28 2 / 2 8 39890 23805 49 150 340 1720	48,24 2,87 153,30 46,80 3,28 2 / 1 8 39890 23805 49 150 340 1720	140,37 47,79 2,94 150,23 46,33 3,24 4 / 2 8 39890 24143 50 147 340 1720	155,00 58,63 2,64 179,80 55,60 3,23 2 / 2 8 39890 26660 42 147 340	155,00 58,63 2,64 179,80 55,60 3,23 2 / 1 8 39890 26660 42 147 340 1720	153,36 56,04 2,74 176,20 55,04 3,20 4 / 2 8 39890 26378 43 148 340 1720	162,00 56,80 2,85 188,30 55,60 3,39 4 / 2 6 67672 27864 46 155 600 1830	186,60 70,70 2,64 212,40 65,20 3,26 4 / 2 6 67672 32095 49 133 600 1830	209,00 83,30 2,51 235,60 73,00 3,23 4 / 2 6 67672 35948 50 147 600	236,90 92,90 2,55 272,50 85,12 3,20 4 / 2 6 75478 40747 53 171 600 2174	271,60 104,21 2,61 307,20 95,86 3,20 4 / 2 8 103511 46716 41 170 600 2174	295,50 112,79 2,62 329,80 104,20 3,17 4 / 2 8 97902 50827 49 152 600 2174	313,90 120,20 2,61 350,80 112,60 3,12 4 / 2 8 97902 53990 55 137 600 2174
Cooling capacity Total power input EER Heating capacity Heating mode total power input COP n° of scroll compressors / circuits n° of axial fans Air flow Cooling operation Water flow Cooling operation water pressure drop Water pump available head Water tank Height Lenght Width	kW kW kW kW m³/h l/h kPa kPa dm³ mm	48,24 2,87 153,30 46,80 3,28 2 / 2 8 39890 23805 49 150 340 1720 3190	48,24 2,87 153,30 46,80 3,28 2 / 1 8 39890 23805 49 150 340 1720 3190	140,37 47,79 2,94 150,23 46,33 3,24 4 / 2 8 39890 24143 50 147 340 1720 3540 1185 82	155,00 58,63 2,64 179,80 55,60 3,23 2 / 2 8 39890 26660 42 147 340 1720 3190 1185 82	155,00 58,63 2,64 179,80 55,60 3,23 2 / 1 8 39890 26660 42 147 340 1720 3190	153,36 56,04 2,74 176,20 55,04 3,20 4 / 2 8 39890 26378 43 148 340 1720 3540 1185 82	162,00 56,80 2,85 188,30 55,60 3,39 4 / 2 6 67672 27864 46 155 600 1830 3540	186,60 70,70 2,64 212,40 65,20 3,26 4 / 2 6 67672 32095 49 133 600 1830 3540	209,00 83,30 2,51 235,60 73,00 3,23 4 / 2 6 67672 35948 50 147 600 1830 3540	236,90 92,90 2,55 272,50 85,12 3,20 4 / 2 6 75478 40747 53 171 600 2174 3540	271,60 104,21 2,61 307,20 95,86 3,20 4 / 2 8 103511 46716 41 170 600 2174 4296	295,50 112,79 2,62 329,80 104,20 3,17 4 / 2 8 97902 50827 49 152 600 2174 4296	313,90 120,20 2,61 350,80 112,60 3,12 4 / 2 8 97902 53990 55 137 600 2174 4296
Cooling capacity Total power input EER Heating capacity Heating mode total power input COP n° of scroll compressors / circuits n° of axial fans Air flow	kW kW kW kW m³/h l/h kPa kPa dm³ mm mm	48,24 2,87 153,30 46,80 3,28 2 / 2 8 39890 23805 49 150 340 1720 3190 1185	48,24 2,87 153,30 46,80 3,28 2 / 1 8 39890 23805 49 150 340 1720 3190 1185	140,37 47,79 2,94 150,23 46,33 3,24 4 / 2 8 39890 24143 50 147 340 1720 3540 1185	155,00 58,63 2,64 179,80 55,60 3,23 2 / 2 8 39890 26660 42 147 340 1720 3190 1185	155,00 58,63 2,64 179,80 55,60 3,23 2 / 1 8 39890 26660 42 147 340 1720 3190 1185	153,36 56,04 2,74 176,20 55,04 3,20 4 / 2 8 39890 26378 43 148 340 1720 3540 1185	162,00 56,80 2,85 188,30 55,60 3,39 4 / 2 6 67672 27864 46 155 600 1830 3540 1654	186,60 70,70 2,64 212,40 65,20 3,26 4 / 2 6 67672 32095 49 133 600 1830 3540 1654	209,00 83,30 2,51 235,60 73,00 3,23 4 / 2 6 67672 35948 50 147 600 1830 3540 1654	236,90 92,90 2,55 272,50 85,12 3,20 4 / 2 6 75478 40747 53 171 600 2174 3540 1654	271,60 104,21 2,61 307,20 95,86 3,20 4 / 2 8 103511 46716 41 170 600 2174 4296 1654	295,50 112,79 2,62 329,80 104,20 3,17 4 / 2 8 97902 50827 49 152 600 2174 4296 1654	313,90 120,20 2,61 350,80 112,60 3,12 4 / 2 8 97902 53990 55 137 600 2174 4296 1654

Cooling capacity referred to the following conditions: water temperature $12 - 7^{\circ}$ C, external air temperature 35° C Heat capacity referred to the following conditions: water temperature $40 - 45^{\circ}$ C, external air temperature 7° C with dry bulb and 6° C with wet bulb Sound pressure referred to the following conditions: 10 mt. away in a free space and directionality factor 2.



Air/water re Approximate thermal output (kW) Efficiency pack LGEHL	CVCI SIDIC I		ımne -	IOW	NOISE	evecu	tion -	Rated	techni	ral dat	а			
Efficiency pack		45	50	60	70	80	tion	90	toomin	our uu	100			120
		2	2	2	2	2	1	2	4	1	2	4	1	2
UERL		042	052	062	072	082	091	092	094	101	102	104	121	122
Power supply	V-ph-Hz	U4Z	UUZ	002	UIZ	UOZ	091		-3-50	101	102	104	121	122
Cooling capacity	kW	48,03	52,23	63,70	69,93	77,40	92,94	92,94	94,26	103,36	103,36	102,22	125,11	125,11
Total power input	kW	16,18	18,55	21,97	24,67	28,16	32,03	32,03	32,32	38,35	38,35	37,06	44,38	44,38
EER	KVV	2,97	2,82	2,90	2,83	2,75	2,90	2,90	2,92	2,70	2,70	2,76	2,82	2,82
Heating capacity	kW	53,25	61,00	71,12	78,84	86,82	104,89	104,89	102,79	118,25	118,25	115,89	139,85	139,85
Heating capacity	kW	15,52	18,30	20,09	22,73	26,04	30,59	30,59	30,28	35,38	35,38	35,03	44,00	44,00
COP	KVV	3,43	3,33	3,54	3,47	3,33	3,43	3,43	3,39	3,34	3,34	3,31	3,18	3,18
n° of scroll compressors / circuits		2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	4 / 2	2 / 2	2 / 1	4 / 2	2 / 2	2 / 1
n° of axial fans		4	4	6	6	6	8	8	8	8	8	8	6	6
Air flow	m³/h	15398	15398	21955	21955	21955	29393	29393	29393	29393	29393	29393	43434	43434
Cooling operation Water flow		8261	8983	10956	12027	13313	15986	15986	16213	17778	17778	17582	21518	21518
Cooling operation water flow Cooling operation water pressure drop	kPa	27	31	47	35	43	32	32	33	39	39	38	40	40
Water pump available head	kPa kPa	157	149	125	131	117	129	129	128	118	118	119	107	107
Water tank	dm ³	200	200	220	220	220	340	340	340	340	340	340	600	600
Height	mm	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1705	1830	1830
Lenght	mm	2010	2010	2360	2360	2360	3190	3190	3540	3190	3190	3540	3540	3540
Width	mm	1185	1185	1185	1185	1185	1185	1185	1185	1185	1185	1185	1654	1654
Sound power elvel	dB(A)	70	70	72	72	72	73	73	73	73	73	73	77	77
Sound pressure level	dB(A)	42	42	44	44	44	45	45	45	45	45	45	49	49
Standard unit operating weight	kg	525	525	630	635	700	905	905	980	915	915	980	1260	1260
Unit with pump and full tank operating weight	kg	862	862	982	987	1067	1426	1426	1557	1436	1436	1557	2040	2040
	_										1400	1001	2010	2010
Air/water reve	rsible hea	t pump	os - LC	OM NO	ISE ex	ecutio	n - Rat	ed tec	hnical	data				
Approximate thermal output (kW)			140			160		170	190	210	240	270	290	320
Efficiency pack		1	2	2	1	2	4	4	4	4	4	4	4	4
LCEHL		141	142	144	161	162	164	ND	194	214	244	274	294	324
Power supply	V-ph-Hz							400-3-50			1	1		
Cooling capacity	kW	137,53	137,53	139,79	155,35	155,35	153,68	ND		211,92	230,32	265,28	287,43	304,36
Total power input	kW	50,28	50,28	49,73	60,17	60,17	57,57	ND	71,36	79,49	94,45	105,18	114,89	122,91
EER		2,74	2,74	2,81	2,58	2,58	2,67	ND	2,54	2,67	2,44	2,52	2,50	2,48
Heating capacity	kW	155,00	155,00	151,90	178,90	178,90	175,32	ND	211,34	234,42	271,14	305,66	328,15	349,04
Heating mode total power input	kW	48,10	48,10	47,62	56,10	56,10	55,54	ND	65,79	73,66	85,89	96,72	105,14	
COP		3,22	3,22	3,19	3,19	3,19	3,16	ND	3,21	3,18	3,16	3,16	3,12	3,07
n° of scroll compressors / circuits		2 / 2		4 / 2	2 / 2	2 / 1	4 / 2	ND	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2
n° of axial fans		6	6	6	6	6	6	ND	6	6	6	8	8	8
Air flow	m ³ /h	43434	43434	43434	40235	40235	40235	ND	55808	63261	63261	87186	81687	81687
Cooling operation Water flow	l/h	23655	23655	24043	26719	26719	26434	ND	31172	36451	36615	45628	49438	52350
Cooling operation water pressure drop	kPa	48	48	50	43	43	43	ND	47	51	50	39	46	52
	kPa	151	151	148	147	147	148	ND	139	143	177	174	158	145
Water pump available head	dm ³	600	600	600	600	600	600	ND	600	600	600	600	600	600
Water tank		1830	1830	1830	1830	1830	1830	ND	1830	2174	2174	2174	2174	2174
Water tank Height	mm													
Water tank Height Lenght	mm mm	3540	3540	3540	3540	3540	3540	ND	3540	3540	3540	4296	4296	4296
Water tank Height Lenght Width	mm mm	1654	3540 1654	1654	1654	1654	1654	ND	1654	1654	1654	1654	1654	1654
Water tank Height Lenght Width Sound power elvel	mm mm dB(A)	1654 77	3540 1654 77	1654 77	1654 77	1654 77	1654 77	ND ND	1654 77	1654 77	1654 78	1654 79	1654 79	1654 79
Water tank Height Lenght Width	mm mm	1654	3540 1654	1654	1654	1654	1654	ND	1654	1654	1654	1654	1654	1654



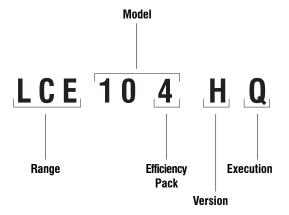
Air/water reversi	ible beat n	ımne	ОШТ	F (sup	er low	nnise)	ехеси	tion -	Rated	techni	eal dat	a			
	inie lieat hi						CYCLU		iaicu	CUIIII		a		100	
Approximate thermal output (kW)		45	50	60	70	80	_	90	1 4	-	100	4	-	120	_
Efficiency pack		2	2	2	2	2	1	2	4	1	2	4	1	2	l
LCEHQ	V ab Ua	042	052	062	072	082	091	092	094	101	102	104	121	122	
Power supply	V-ph-Hz	10.00		00.70	22.22	77.40	00.04		-3-50	100.00	400.00	100.00	100.00	100.00	1
Cooling capacity	kW	48,03	52,23	63,70	69,93	77,40	92,94	92,94	94,26	103,36	103,36	102,22	123,60	123,60	1
Total power input	kW	16,18	18,55	21,97	24,67	28,16	32,03	32,03	32,32	38,35	35,38	37,06	45,04	38,35	1
EER		2,97	2,82	2,90	2,83	2,75	2,90	2,90	2,92	2,70	2,92	2,76	2,74	3,22	ļ
Heating capacity	kW	53,25	61,00	71,12	78,84	86,82	104,89	104,89	102,79	118,25	118,25	115,89	136,20	136,20	ľ
Heating mode total power input	kW	15,52	18,30	20,09	22,73	26,04	30,59	30,59	30,28	35,38	35,38	35,03	42,70	42,70	ļ
COP		3,43	3,33	3,54	3,47	3,33	3,43	3,43	3,39	3,34	3,34	3,31	3,19	3,19	1
n° of scroll compressors / circuits		2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 2	2 / 1	4 / 2	2 / 2	2 / 1	4 / 2	2 / 2	2 / 1	ļ
n° of axial fans		4	4	6	6	6	8	8	8	8	8	8	6	6	ļ
Air flow	m ³ /h	15398	15398	21955	21955	21955	29393	29393	29393	29393	29393	29393	35930	35930	ļ
Cooling operation Water flow	l/h	8261	8983	10956	12027	13313	15986	15986	16213	17778	17778	17582	21259	21259	L
Cooling operation water pressure drop	kPa	27	31	47	35	43	32	32	33	39	39	38	39	39	
Water pump available head	kPa	157	149	125	131	117	129	129	128	118	118	119	109	109	1
Nater tank	dm ³	200	200	220	220	220	340	340	340	340	340	340	600	600	
Height	mm	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1720	1830	1830	
Lenght	mm	2010	2010	2360	2360	2360	3190	3190	3540	3190	3190	3540	3540	3540	
Width	mm	1185	1185	1185	1185	1185	1185	1185	1185	1185	1185	1185	1654	1654	
Sound power elvel	dB(A)	67	67	69	69	69	70	70	70	70	70	70	69	69	
Sound pressure level	dB(A)	39	39	41	41	41	42	42	42	42	42	42	41	41	
Standard unit operating weight	kg	525	525	630	635	700	905	905	980	915	915	980	1260	1260	
Unit with pump and full tank operating weight	kg	862	862	982	987	1067	1426	1426	1557	1436	1436	1557	2040	2040	İ
												1557	2040	2040	İ
Unit with pump and full tank operating weight Air/water reversible Approximate thermal output (kW)															
Air/water reversible Approximate thermal output (kW)			UITE (\$	super l		se) ex		n - Rat	ed tec	hnical	data	1557 270 4	290	2040 320 4	
Air/water reversible Approximate thermal output (kW) Efficiency pack		os - QI	UITE (\$ 140 2	super I	ow noi	se) ex	ecution 4	170 4	ed tec 190 4	hnical 210 4	data 240 4	270 4	290 4	320 4	
Air/water reversible Approximate thermal output (kW) Efficiency pack .CEHQ		os - QI	UITE (\$ 140 2	super l	ow noi	se) ex	ecutio	n - Rat 170	190 4 194	hnical 210	data 240	270	290	320	
Air/water reversible Approximate thermal output (kW) Efficiency pack .CEHQ Power supply	heat pum	1 1 141	140 2 142	2 144	ow noi 1 161	se) ex 160 2 162	4 164	170 4 ND 400-3-50	190 4 194	210 4 214	240 4 244	270 4 274	290 4 294	320 4 324	
Air/water reversible Approximate thermal output (kW) Efficiency pack CEHQ Power supply Cooling capacity	heat pum	1 141 135,48	140 2 142 135,48	2 144 137,60	1 161 151,46	160 2 162 151,46	4 164 150,10	170 4 ND 400-3-50	190 4 194 0 164,43	210 4 214 192,65	240 4 244 209,62	270 4 274 260,68	290 4 294 278,71	320 4 324 293,81	
Air/water reversible Approximate thermal output (kW) Efficiency pack .GEHQ Power supply Cooling capacity Total power input	V-ph-Hz	1 141 135,48 51,14	140 2 142 135,48 51,14	2 144 137,60 50,82	1 161 151,46 61,96	160 2 162 151,46 61,96	4 164 150,10 59,37	170 4 ND 400-3-50 ND	190 4 194 0 164,43 81,13	210 4 214 192,65 90,77	240 4 244 244 209,62 98,73	270 4 274 260,68 105,56	290 4 294 278,71 117,26	320 4 324 293,81 126,09	
Air/water reversible Approximate thermal output (kW) Efficiency pack CEHQ Power supply Cooling capacity Total power input EER	V-ph-Hz	1 141 135,48 51,14 2,65	140 2 142 135,48 51,14 2,65	2 144 137,60 50,82 2,71	1 161 151,46 61,96 2,44	160 2 162 151,46 61,96 2,44	4 164 150,10 59,37 2,53	170 4 ND 400-3-50 ND ND	190 4 194 194 164,43 81,13 2,03	210 4 214 192,65 90,77 2,12	240 4 244 209,62 98,73 2,12	270 4 274 260,68 105,56 2,47	290 4 294 278,71 117,26 2,38	320 4 324 293,81 126,09 2,33	
Air/water reversible Approximate thermal output (kW) Efficiency pack CEHQ Power supply Cooling capacity Total power input EER Heating capacity	V-ph-Hz kW kW	1 141 135,48 51,14 2,65 151,20	140 2 142 135,48 51,14 2,65 151,20	2 144 137,60 50,82 2,71 148,18	1 161 151,46 61,96 2,44 174,10	160 2 162 151,46 61,96 2,44 174,10	4 164 150,10 59,37 2,53 170,62	170 4 ND 400-3-50 ND ND ND	190 4 194 0 164,43 81,13 2,03 205,67	210 4 214 192,65 90,77 2,12 228,13	240 4 244 209,62 98,73 2,12 263,86	270 4 274 260,68 105,56 2,47 297,46	290 4 294 278,71 117,26 2,38 319,34	320 4 324 293,81 126,09 2,33 339,68	
Air/water reversible Approximate thermal output (kW) Efficiency pack .CEHQ Power supply Cooling capacity Total power input EER Heating capacity leating mode total power input	V-ph-Hz	1 141 135,48 51,14 2,65 151,20 47,40	140 2 142 135,48 51,14 2,65 151,20 47,40	2 144 137,60 50,82 2,71 148,18 46,93	1 161 151,46 61,96 2,44 174,10 55,00	160 2 162 151,46 61,96 2,44 174,10 55,00	4 164 150,10 59,37 2,53 170,62 54,45	170 4 ND 400-3-50 ND ND ND ND	190 4 194 0 164,43 81,13 2,03 205,67 64,50	192,65 90,77 2,12 228,13 72,21	240 4 244 209,62 98,73 2,12 263,86 84,20	270 4 274 260,68 105,56 2,47 297,46 94,83	290 4 294 278,71 117,26 2,38 319,34 103,08	320 4 324 293,81 126,09 2,33 339,68 111,38	
Air/water reversible Approximate thermal output (kW) Efficiency pack CEHQ Power supply Cooling capacity Total power input EER Heating capacity Heating mode total power input COP	V-ph-Hz kW kW	1 141 135,48 51,14 2,65 151,20 47,40 3,19	140 2 142 135,48 51,14 2,65 151,20 47,40 3,19	2 144 137,60 50,82 2,71 148,18 46,93 3,16	1 151,46 61,96 2,44 174,10 55,00 3,17	160 2 162 151,46 61,96 2,44 174,10 55,00 3,17	4 164 150,10 59,37 2,53 170,62 54,45 3,13	170 4 ND 400-3-56 ND ND ND ND ND	190 4 194 164,43 81,13 2,03 205,67 64,50 3,19	192,65 90,77 2,12 228,13 72,21 3,16	240 4 244 209,62 98,73 2,12 263,86 84,20 3,13	270 4 274 260,68 105,56 2,47 297,46 94,83 3,14	290 4 294 278,71 117,26 2,38 319,34 103,08 3,10	320 4 324 293,81 126,09 2,33 339,68 111,38 3,05	
Air/water reversible Approximate thermal output (kW) Efficiency pack LCEHQ Power supply Cooling capacity Total power input EER Heating capacity Heating mode total power input COP n° of scroll compressors / circuits	V-ph-Hz kW kW	1 141 135,48 51,14 2,65 151,20 47,40 3,19 2 / 2	140 2 142 135,48 51,14 2,65 151,20 47,40 3,19 2 / 1	2 144 137,60 50,82 2,71 148,18 46,93 3,16 4 / 2	1 151,46 61,96 2,44 174,10 55,00 3,17 2 / 2	160 2 162 151,46 61,96 2,44 174,10 55,00 3,17 2 / 1	4 164 150,10 59,37 2,53 170,62 54,45 3,13 4 / 2	170 4 ND 400-3-56 ND ND ND ND ND ND	190 4 194 0 164,43 81,13 2,03 205,67 64,50 3,19 4 / 2	192,65 90,77 2,12 228,13 72,21 3,16 4 / 2	240 4 244 298,73 2,12 263,86 84,20 3,13 4 / 2	270 4 274 260,68 105,56 2,47 297,46 94,83 3,14 4 / 2	290 4 294 278,71 117,26 2,38 319,34 103,08 3,10 4 / 2	320 4 324 293,81 126,09 2,33 339,68 111,38 3,05 4 / 2	
Air/water reversible Approximate thermal output (kW) Efficiency pack LCEHQ Power supply Cooling capacity Total power input EER Heating capacity Heating mode total power input COP n° of scroll compressors / circuits n° of axial fans	V-ph-Hz kW kW kW	1 141 135,48 51,14 2,65 151,20 47,40 3,19 2 / 2	140 2 142 135,48 51,14 2,65 151,20 47,40 3,19 2 / 1 6	2 144 137,60 50,82 2,71 148,18 46,93 3,16 4 / 2	1 151,46 61,96 2,44 174,10 55,00 3,17 2 / 2	160 2 162 151,46 61,96 2,44 174,10 55,00 3,17 2 / 1 6	4 164 150,10 59,37 2,53 170,62 54,45 3,13 4 / 2	170 4 ND 400-3-50 ND ND ND ND ND ND ND ND	190 4 194 164,43 81,13 2,03 205,67 64,50 3,19 4 / 2	192,65 90,77 2,12 228,13 72,21 3,16 4 / 2	240 4 244 298,73 2,12 263,86 84,20 3,13 4 / 2 6	270 4 274 260,68 105,56 2,47 297,46 94,83 3,14 4 / 2	290 4 294 278,71 117,26 2,38 319,34 103,08 3,10 4 / 2 8	320 4 324 293,81 126,09 2,33 339,68 111,38 3,05 4 / 2	
Air/water reversible Approximate thermal output (kW) Efficiency pack CGEHQ Power supply Cooling capacity Total power input EER Heating capacity deating mode total power input COP n° of scroll compressors / circuits n° of axial fans Air flow	V-ph-Hz kW kW kW m³/h	1 141 135,48 51,14 2,65 151,20 47,40 3,19 2 / 2 6 35930	140 2 142 135,48 51,14 2,65 151,20 47,40 3,19 2 / 1 6 35930	2 144 137,60 50,82 2,71 148,18 46,93 3,16 4 / 2 6 35930	1 161 151,46 61,96 2,44 174,10 55,00 3,17 2 / 2 6 35930	160 2 162 151,46 61,96 2,44 174,10 55,00 3,17 2 / 1 6 35930	4 150,10 59,37 2,53 170,62 54,45 3,13 4 / 2 6 35930	170 4 ND 400-3-50 ND ND ND ND ND ND ND ND ND	190 4 194 0 164,43 81,13 2,03 205,67 64,50 3,19 4 / 2 6 35930	192,65 90,77 2,12 228,13 72,21 3,16 4 / 2 6 40953	240 4 244 299,62 98,73 2,12 263,86 84,20 3,13 4 / 2 6 40953	270 4 274 260,68 105,56 2,47 297,46 94,83 3,14 4 / 2 8 69835	290 4 294 278,71 117,26 2,38 319,34 103,08 3,10 4 / 2 8 69835	320 4 324 293,81 126,09 2,33 339,68 111,38 3,05 4 / 2 8 69835	
Air/water reversible Approximate thermal output (kW) Efficiency pack .CEHQ Power supply Cooling capacity Total power input EER Heating capacity Heating mode total power input COP n° of scroll compressors / circuits n° of axial fans Air flow Cooling operation Water flow	V-ph-Hz kW kW kW m³/h l/h	1 141 135,48 51,14 2,65 151,20 47,40 3,19 2 / 2 6 35930 23303	140 2 142 135,48 51,14 2,65 151,20 47,40 3,19 2 / 1 6 35930 23303	2 144 137,60 50,82 2,71 148,18 46,93 3,16 4 / 2 6 35930 23667	1 161 151,46 61,96 2,44 174,10 55,00 3,17 2 / 2 6 35930 26051	160 2 162 151,46 61,96 2,44 174,10 55,00 3,17 2 / 1 6 35930 26051	4 164 150,10 59,37 2,53 170,62 54,45 3,13 4 / 2 6 35930 25816	170 4 ND 400-3-50 ND ND ND ND ND ND ND ND ND ND	190 4 194 194 164,43 81,13 2,03 205,67 64,50 3,19 4 / 2 6 35930 28282	192,65 90,77 2,12 228,13 72,21 3,16 4 / 2 6 40953 33135	240 4 244 298,73 2,12 263,86 84,20 3,13 4 / 2 6 40953 36054	270 4 274 260,68 105,56 2,47 297,46 94,83 3,14 4 / 2 8 69835 44837	290 4 294 278,71 117,26 2,38 319,34 103,08 3,10 4 / 2 8 69835 47938	320 4 324 293,81 126,09 2,33 339,68 111,38 3,05 4 / 2 8 69835 50535	
Air/water reversible Approximate thermal output (kW) Efficiency pack CEHQ Power supply Cooling capacity Fotal power input EER Heating capacity Reating mode total power input COP 1º of scroll compressors / circuits 1º of axial fans Air flow Cooling operation Water flow Cooling operation water pressure drop	V-ph-Hz kW kW kW m³/h l/h kPa	1 141 135,48 51,14 2,65 151,20 47,40 3,19 2 / 2 6 35930 23303 47	140 2 142 135,48 51,14 2,65 151,20 47,40 3,19 2 / 1 6 35930 23303 47	2 144 137,60 50,82 2,71 148,18 46,93 3,16 4 / 2 6 35930 23667 48	1 151,46 61,96 2,44 174,10 55,00 3,17 2 / 2 6 35930 26051 41	160 2 162 151,46 61,96 2,44 174,10 55,00 3,17 2 / 1 6 35930 26051 41	4 164 150,10 59,37 2,53 170,62 54,45 3,13 4 / 2 6 35930 25816 40	170 4 ND 400-3-50 ND ND ND ND ND ND ND ND ND ND ND ND ND	190 4 194 164,43 81,13 2,03 205,67 64,50 3,19 4 / 2 6 35930 28282 39	192,65 90,77 2,12 228,13 72,21 3,16 4 / 2 6 40953 33135 39	240 4 244 244 209,62 98,73 2,12 263,86 84,20 3,13 4 / 2 6 40953 36054 42	270 4 274 260,68 105,56 2,47 297,46 94,83 3,14 4 / 2 8 69835 44837 38	290 4 294 278,71 117,26 2,38 319,34 103,08 3,10 4 / 2 8 69835 47938 44	320 4 324 293,81 126,09 2,33 339,68 111,38 3,05 4 / 2 8 69835 50535 48	
Air/water reversible Approximate thermal output (kW) Efficiency pack CEHQ Power supply Cooling capacity Total power input EER Heating capacity leating mode total power input COP n° of scroll compressors / circuits n° of axial fans Air flow Cooling operation Water flow Cooling operation water pressure drop Water pump available head	V-ph-Hz kW kW kW m³/h l/h kPa kPa	1 141 135,48 51,14 2,65 151,20 47,40 3,19 2 / 2 6 35930 23303 47 153	140 2 142 135,48 51,14 2,65 151,20 47,40 3,19 2 / 1 6 35930 23303 47 153	2 144 137,60 50,82 2,71 148,18 46,93 3,16 4 / 2 6 35930 23667 48 151	1 151,46 61,96 2,44 174,10 55,00 3,17 2 / 2 6 35930 26051 41 151	160 2 162 151,46 61,96 2,44 174,10 55,00 3,17 2 / 1 6 35930 26051 41 151	4 150,10 59,37 2,53 170,62 54,45 3,13 4 / 2 6 35930 25816 40 152	170 4 ND 400-3-50 ND ND ND ND ND ND ND ND ND ND ND ND ND	190 4 194 164,43 81,13 2,03 205,67 64,50 3,19 4 / 2 6 35930 28282 39 161	192,65 90,77 2,12 228,13 72,21 3,16 4 / 2 6 40953 33135 39 171	240 4 244 298,73 2,12 263,86 84,20 3,13 4 / 2 6 40953 36054 42 193	270 4 274 260,68 105,56 2,47 297,46 94,83 3,14 4 / 2 8 69835 44837 38 177	290 4 294 278,71 117,26 2,38 319,34 103,08 3,10 4 / 2 8 69835 47938 44 164	320 4 324 293,81 126,09 2,33 339,68 111,38 3,05 4 / 2 8 69835 50535 48 153	
Air/water reversible Approximate thermal output (kW) Efficiency pack CEHQ Power supply Cooling capacity Fotal power input EER Heating capacity Leating mode total power input COP n° of scroll compressors / circuits n° of axial fans Air flow Cooling operation Water flow Cooling operation water pressure drop Water pump available head Water tank	V-ph-Hz kW kW kW m³/h l/h kPa kPa dm³	1 141 135,48 51,14 2,65 151,20 47,40 3,19 2 / 2 6 35930 23303 47 153 600	140 2 142 135,48 51,14 2,65 151,20 47,40 3,19 2 / 1 6 35930 23303 47 153 600	2 144 137,60 50,82 2,71 148,18 46,93 3,16 4 / 2 6 35930 23667 48 151 600	1 151,46 61,96 2,44 174,10 55,00 3,17 2 / 2 6 35930 26051 41 151 600	160 2 162 151,46 61,96 2,44 174,10 55,00 3,17 2 / 1 6 35930 26051 41 151 600	4 150,10 59,37 2,53 170,62 54,45 3,13 4 / 2 6 35930 25816 40 152 600	170 4 ND 400-3-56 ND ND ND ND ND ND ND ND ND ND ND ND ND	190 4 194 194 164,43 81,13 2,03 205,67 64,50 3,19 4 / 2 6 35930 28282 39 161 600	192,65 90,77 2,12 228,13 72,21 3,16 4 / 2 6 40953 33135 39 171 600	240 4 244 244 209,62 98,73 2,12 263,86 84,20 3,13 4 / 2 6 40953 36054 42 193 600	270 4 274 260,68 105,56 2,47 297,46 94,83 3,14 4 / 2 8 69835 44837 38 177 600	290 4 294 278,71 117,26 2,38 319,34 103,08 3,10 4 / 2 8 69835 47938 44 164 600	320 4 324 293,81 126,09 2,33 339,68 111,38 3,05 4 / 2 8 69835 50535 48 153 600	
Air/water reversible Approximate thermal output (kW) Efficiency pack CEHQ Dower supply Cooling capacity Total power input EER Heating capacity eating mode total power input COP of of scroll compressors / circuits of of axial fans Air flow Cooling operation Water flow Cooling operation water pressure drop Water pump available head Water tank Height	V-ph-Hz kW kW kW m³/h l/h kPa kPa dm³ mm	1 141 135,48 51,14 2,65 151,20 47,40 3,19 2 / 2 6 35930 23303 47 153 600 1830	140 2 142 135,48 51,14 2,65 151,20 47,40 3,19 2 / 1 6 35930 23303 47 153 600 1830	2 144 137,60 50,82 2,71 148,18 46,93 3,16 4 / 2 6 35930 23667 48 151 600 1830	1 151,46 61,96 2,44 174,10 55,00 3,17 2 / 2 6 35930 26051 41 151 600 1830	160 2 162 151,46 61,96 2,44 174,10 55,00 3,17 2 / 1 6 35930 26051 41 151 600 1830	4 150,10 59,37 2,53 170,62 54,45 3,13 4 / 2 6 35930 25816 40 152 600 1830	170 4 ND 400-3-56 ND ND ND ND ND ND ND ND ND ND ND ND ND	190 4 194 194 164,43 81,13 2,03 205,67 64,50 3,19 4 / 2 6 35930 28282 39 161 600 1830	192,65 90,77 2,12 228,13 72,21 3,16 4 / 2 6 40953 33135 39 171 600 2174	240 4 244 244 209,62 98,73 2,12 263,86 84,20 3,13 4 / 2 6 40953 36054 42 193 600 2174	270 4 274 260,68 105,56 2,47 297,46 94,83 3,14 4 / 2 8 69835 44837 38 177 600 2174	290 4 294 117,26 2,38 319,34 103,08 3,10 4 / 2 8 69835 47938 44 164 600 2174	320 4 324 293,81 126,09 2,33 339,68 111,38 3,05 4 / 2 8 69835 50535 48 153 600 2174	
Air/water reversible Approximate thermal output (kW) Efficiency pack CEHQ Power supply Cooling capacity Total power input EER Heating capacity leating mode total power input COP n° of scroll compressors / circuits n° of axial fans Air flow Cooling operation Water flow Cooling operation water pressure drop Water pump available head Water tank Height Lenght	V-ph-Hz kW kW kW m³/h l/h kPa kPa dm³ mm mm	1 141 135,48 51,14 2,65 151,20 47,40 3,19 2 / 2 6 35930 23303 47 153 600 1830 3540	140 2 142 135,48 51,14 2,65 151,20 47,40 3,19 2 / 1 6 35930 23303 47 153 600 1830 3540	2 144 137,60 50,82 2,71 148,18 46,93 3,16 4 / 2 6 35930 23667 48 151 600 1830 3540	1 151,46 61,96 2,44 174,10 55,00 3,17 2 / 2 6 35930 26051 41 151 600 1830 3540	160 2 162 151,46 61,96 2,44 174,10 55,00 3,17 2 / 1 6 35930 26051 41 151 600 1830 3540	4 150,10 59,37 2,53 170,62 54,45 3,13 4 / 2 6 35930 25816 40 152 600 1830 3540	170 4 ND 400-3-56 ND ND ND ND ND ND ND ND ND ND ND ND ND	190 4 194 194 164,43 81,13 2,03 205,67 64,50 3,19 4 / 2 6 35930 28282 39 161 600 1830 3540	192,65 90,77 2,12 228,13 72,21 3,16 4 / 2 6 40953 33135 39 171 600 2174 3540	240 4 244 244 209,62 98,73 2,12 263,86 84,20 3,13 4 / 2 6 40953 36054 42 193 600 2174 3540	270 4 274 260,68 105,56 2,47 297,46 94,83 3,14 4 / 2 8 69835 44837 38 177 600 2174 4296	290 4 294 117,26 2,38 319,34 103,08 3,10 4 / 2 8 69835 47938 44 164 600 2174 4296	320 4 324 293,81 126,09 2,33 339,68 111,38 3,05 4 / 2 8 69835 50535 48 153 600 2174 4296	
Air/water reversible Approximate thermal output (kW) Efficiency pack CEHQ Power supply Cooling capacity Total power input EER Heating capacity Iteating mode total power input COP 1° of scroll compressors / circuits 1° of axial fans Air flow Cooling operation Water flow Cooling operation water pressure drop Water pump available head Water tank Height Lenght Midth	V-ph-Hz kW kW kW m³/h l/h kPa kPa dm³ mm mm	1 141 135,48 51,14 2,65 151,20 47,40 3,19 2 / 2 6 35930 23303 47 153 600 1830 3540 1654	140 2 142 135,48 51,14 2,65 151,20 47,40 3,19 2 / 1 6 35930 23303 47 153 600 1830 3540 1654	2 144 137,60 50,82 2,71 148,18 46,93 3,16 4 / 2 6 35930 23667 48 151 600 1830 3540 1654	1 151,46 61,96 2,44 174,10 55,00 3,17 2 / 2 6 35930 26051 41 151 600 1830 3540 1654	160 2 162 151,46 61,96 2,44 174,10 55,00 3,17 2 / 1 6 35930 26051 41 151 600 1830 3540 1654	4 150,10 59,37 2,53 170,62 54,45 3,13 4 / 2 6 35930 25816 40 152 600 1830 3540 1654	170 4 ND 400-3-50 ND ND ND ND ND ND ND ND ND ND ND ND ND	ed tec 190 4 194 194 164,43 81,13 2,03 205,67 64,50 3,19 4 / 2 6 35930 28282 39 161 600 1830 3540 1654	192,65 90,77 2,12 228,13 72,21 3,16 4 / 2 6 40953 33135 39 171 600 2174 3540 1654	240 4 244 298,73 2,12 263,86 84,20 3,13 4 / 2 6 40953 36054 42 193 600 2174 3540 1654	270 4 274 260,68 105,56 2,47 297,46 94,83 3,14 4 / 2 8 69835 44837 38 177 600 2174 4296 1654	290 4 294 278,71 117,26 2,38 319,34 103,08 3,10 4 / 2 8 69835 47938 44 164 600 2174 4296 1654	320 4 324 293,81 126,09 2,33 339,68 111,38 3,05 4 / 2 8 69835 50535 48 153 600 2174 4296 1654	
Air/water reversible Approximate thermal output (kW) Efficiency pack CEHQ Power supply Cooling capacity Total power input EER Heating capacity leating mode total power input COP 1° of scroll compressors / circuits 1° of axial fans Air flow Cooling operation Water flow Cooling operation water pressure drop Water pump available head Water tank Height Lenght Midth Sound power elvel	V-ph-Hz kW kW kW Mage and the second	1 141 135,48 51,14 2,65 151,20 47,40 3,19 2 / 2 6 35930 23303 47 153 600 1830 3540 1654 69	140 2 142 135,48 51,14 2,65 151,20 47,40 3,19 2 / 1 6 35930 23303 47 153 600 1830 3540 1654 69	2 144 137,60 50,82 2,71 148,18 46,93 3,16 4 / 2 6 35930 23667 48 151 600 1830 3540 1654 69	1 151,46 61,96 2,44 174,10 55,00 3,17 2 / 2 6 35930 26051 41 151 600 1830 3540 1654 69	160 2 162 151,46 61,96 2,44 174,10 55,00 3,17 2 / 1 6 35930 26051 41 151 600 1830 3540 1654 69	4 150,10 59,37 2,53 170,62 54,45 3,13 4 / 2 6 35930 25816 40 152 600 1830 3540 1654 69	170 4 ND 400-3-50 ND ND ND ND ND ND ND ND ND ND ND ND ND	190 4 194 164,43 81,13 2,03 205,67 64,50 3,19 4 / 2 6 35930 28282 39 161 600 1830 3540 1654 69	192,65 90,77 2,12 228,13 72,21 3,16 4 / 2 6 40953 33135 39 171 600 2174 3540 1654 69	240 4 244 244 209,62 98,73 2,12 263,86 84,20 3,13 4 / 2 6 40953 36054 42 193 600 2174 3540 1654 69	270 4 274 260,68 105,56 2,47 297,46 94,83 3,14 4 / 2 8 69835 44837 38 177 600 2174 4296 1654 70	290 4 294 278,71 117,26 2,38 319,34 103,08 3,10 4 / 2 8 69835 47938 44 164 600 2174 4296 1654 70	320 4 324 293,81 126,09 2,33 339,68 111,38 3,05 4 / 2 8 69835 50535 48 153 600 2174 4296 1654 70	
Air/water reversible Approximate thermal output (kW) Efficiency pack LCEHQ Power supply Cooling capacity Total power input EER Heating capacity Heating mode total power input COP n° of scroll compressors / circuits	V-ph-Hz kW kW kW m³/h l/h kPa kPa dm³ mm mm	1 141 135,48 51,14 2,65 151,20 47,40 3,19 2 / 2 6 35930 23303 47 153 600 1830 3540 1654	140 2 142 135,48 51,14 2,65 151,20 47,40 3,19 2 / 1 6 35930 23303 47 153 600 1830 3540 1654	2 144 137,60 50,82 2,71 148,18 46,93 3,16 4 / 2 6 35930 23667 48 151 600 1830 3540 1654	1 151,46 61,96 2,44 174,10 55,00 3,17 2 / 2 6 35930 26051 41 151 600 1830 3540 1654	160 2 162 151,46 61,96 2,44 174,10 55,00 3,17 2 / 1 6 35930 26051 41 151 600 1830 3540 1654	4 150,10 59,37 2,53 170,62 54,45 3,13 4 / 2 6 35930 25816 40 152 600 1830 3540 1654	170 4 ND 400-3-50 ND ND ND ND ND ND ND ND ND ND ND ND ND	ed tec 190 4 194 194 164,43 81,13 2,03 205,67 64,50 3,19 4 / 2 6 35930 28282 39 161 600 1830 3540 1654	192,65 90,77 2,12 228,13 72,21 3,16 4 / 2 6 40953 33135 39 171 600 2174 3540 1654	240 4 244 298,73 2,12 263,86 84,20 3,13 4 / 2 6 40953 36054 42 193 600 2174 3540 1654	270 4 274 260,68 105,56 2,47 297,46 94,83 3,14 4 / 2 8 69835 44837 38 177 600 2174 4296 1654	290 4 294 278,71 117,26 2,38 319,34 103,08 3,10 4 / 2 8 69835 47938 44 164 600 2174 4296 1654	320 4 324 293,81 126,09 2,33 339,68 111,38 3,05 4 / 2 8 69835 50535 48 153 600 2174 4296 1654	

Cooling capacity referred to the following conditions: water temperature $12 - 7^{\circ}$ C, external air temperature 35° C Heat capacity referred to the following conditions: water temperature $40 - 45^{\circ}$ C, external air temperature 7° C with dry bulb and 6° C with wet bulb Sound pressure referred to the following conditions: 10 mt. away in a free space and directionality factor 2.



After decided which is the desired capacity in order to chose the right model it is necessary to define the version (CHILLER or HEAT PUMP), the structure of the refrigerant circuit (EFFICIENCY PACK) and the sound version (STANDARD, LOW NOISE or QUITE executions).

It is necessary start from the choice of options and accessories in order to define the unit...



> EFFICIENCY PACK

The possibility to realize different combination / refrigerant circuit/compressors allows to personalize the efficiency levels at full load and/or at partial load operations.

1 2x circuit/2x compressors

This solution is designed to give the best efficiency at full load (EER and COP)

2 1x circuit/2x comrpessors

This solution is designed to give the best efficiency at partial load, reaching an ESEER level of 4

4 2x cirucit/ 4xcmpressors

This solution allow toh ave 4 capacity steps, following the user load in a closet way and redeucing the number of compressors on/off

> VERSION

C Chiller-Only cooling

H Reversibile heat pump

> ACOUSTIC EXECUTIONS

S Standard executions

L Low noise excecutions

Q Superlow noise executions

POWER SUPPLY

- 400/3/50 + N
- 400/3/50 with transformer
- 400/3/50 + N with thermal magnetic breaker
- 400/3/50 with transformer and with thermal magnetic breaker

MICROPROCESSOR/EXPANSION DEVICES

- BASE + electronic expansion valve
- ADVANCED + electronic expansion valve

WATER PUMP

- Not present
- Single standard pump and expansion vessel
- Single uprated pump and expansion vessel
- Double standard pump for simultaneous operation (AND) and expansion vessel
- Double uprated pump for simultaneous operation (AND) and expansion vessel
- Double standard pump for alternate operation (OR) and expansion vessel
- Double uprated pump for alternate operation (OR) and expansion vessel

WATER TANK

- Not present
- Present

HEAT RECOVERY

- Not present
- partial (desuperheater 40%)

CONDENSATION CONTROL

- Not present
- with fan speed control

ANTIFREEZE KIT

- Not present
- present on evaporator
- present on evaporator and pump
- present on evaporator, tank and pump

REMOTE COMMUNICATION

- Not present
- RS485 serial card (Carel or Modbus protocol)
- Lonworks serial cards (only if digit 2 = B)

REFRIGERANT CIRCUIT ACCESSORIES

- Not present
- Pressure gauges

SPECIAL FINNED PACK HEAT EXCHANGER

- Standard
- Copper/copper
- Cataphoresis
- Fins protection treatment
- Special

PACKAGE

- Standard
- Wooden crate
- Wooden box

INSULATION

- Not present
- Rubber antivibration dampers
- Spring antivibration dampers

REMOTE CONTROL

- Not present
- Simplified
- BASE microprocessor
- ADVANCED microprocessor

UNIT INSTALLATION TOOLS

- Not present
- Pair of victaulic couplings for IN-OUT water connections
- Paddle flow switch
- Pair of victaulic couplings for IN-OUT water connections + paddle flow switch

ACCESSORIES

- Power factor correction capacitors
- Soft-starter kit
- Service kit (probes for a unit operation quick check)
- Clock card
- ON-OFF compressor control
- Remote control to limit compressor turning on
- Board for customizable digital alarms
- Outdoor air temperature probe for automatic adjustment of the set point
- Pressure gauges

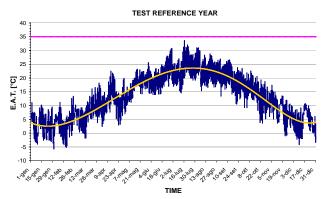
- Kit for interception (solenoid and tap on the liquid line)
- Other reference standard than the 97/23 PED
- pipes for unit lifting up
- Finned pack heat exchanger protection grille





LSE: multi scroll solutions for high performance at partial loads

The real thermal load of an air-conditioning plant is 90% of the time lower than 60% of the nominal load, even if the choice of a chiller/heat pump depends on the maximal thermal load of the plant where it will work.



The LCE chiller/heat pumps range is made up of 12 models with capacities for 360 to 920 kW (620kW heat pump) and it uses only 2- or 4-circuit scroll refrigerant compressors.



The number of compressors goes from 2 to 3 for each refrigerant circuit according to the sizes, multiplying the steps of partialization.

The high number of partialization steps allows the unit to adjust its capacity to the real needs of the plant with particular advantages in terms of efficiency at partial loads compared to the traditional screw compressors. The control microprocessor distribute automatically the working of the compressor and it shares out their functioning with a consequent extension of the working length.

During partial load working the compressors work with overdimensioned exchange surfaces making better thermodynamic cycles thanks to the **electronic expansion vessel as standard on all the models**.

VERSIONS

- Only cooling
- Free-Cooling
- Heat pump as far as 620 kW

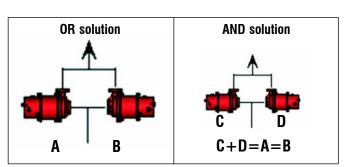
HYDRAULIC OPTIONS

Complete hydronic kit can be incorporated inside the unit without modifying the dimensions and with the possibility to chose the circulation water pump.

- Single pump, standard or rated prevalence.
- Double pump with OR solution: standard or rated prevalence, single functioning. The pumps work in turn according to time/anomaly.
- Double pump solution AND: standard or rated prevalence, simultaneous functioning.

Hydraulically linked in parallel they deliver the nominal water flow in simultaneous functioning.

At partial loads the functioning is limited with one single pump which decrease the flow value by $\frac{1}{3}$ than the nominal one with an average reduction of the pumping costs by about 30%.





ACOUSTIC EXECUTION

S standard execution

L Low Noise (silent) execution for low sound levels

Q Quite (super-silent) execution for very sound levels

INTERCONNECTIVITY

The advances microprocessor, fitted as standard allow to realize:

- Lan network (up to 4 units)
- Kit GSM for the reading and setting of parameter via mobile telephone
- WEB kit for the reading and setting of parameter via remote PC thorugh the IP address of the unit
- Serial board for the connections with protocols:
 Carel / Modbus
 Lonworks / Trend
- HIWEB hardware with Ethernet board for protocols: Bacnet/SNMP
- HIWEB Software: Ethernet board for Web interface



			RATED TE	CHNICAL D	DATA				
LSE			366	406	446	476	548	588	628
Cooling capa	acity ¹	kW	355,5	394,4	439	468,2	539,1	586,1	622,1
Power input		kW	132,4	149,4	163,6	176,4	189,6	210,8	229,2
Heating capa		kW	406,4	451,9	482	509,3	602	639,1	675
power input		kW	127,7	142,4	157,5	169	193,5	208,8	224,2
EER			2,68	2,64	2,68	2,65	2,84	2,78	2,71
ESEER			3,79	3,75	3,8	3,76	4,1	4,01	3,85
СОР			3,18	3,17	3,06	3,01	3,11	3,06	3,01
N° of scroll o	compressors / circuits		6 / 2	6 / 2	6 / 2	6 / 2	8 / 4	8 / 4	8 / 4
Water flow ¹		l/h	61141	67831	75508	80532	92731	100817	107005
Water pressi	Water pressure drop ¹		39	48	47	54	46	54	61
Expansion ve	xpansion vessel		25	25	25	25	50	50	50
Water tank	ater tank		600	600	800	800	1230	1230	1230
- 40	Height	mm	2350	2350	2350	2350	2350	2350	2350
STANDARD Execution S	Lenght ³	mm	3000	3000	4000	4000	5000	5000	5000
TANE	Width	mm	2200	2200	2200	2200	2200	2200	2200
О Ш	Sound power level	dB(A)	90	90	91	91	92	92	92
	Height	mm	2350	2350	2350	2350	2350	2350	2350
LOW NOISE Execution L	Lenght ³	mm	3000	4000	4000	5000	5000	5000	7000
OW I	Width	mm	2200	2200	2200	2200	2200	2200	2200
	Sound power level	dB(A)	82	83	83	84	84	84	85
ıtion	Height	mm	2350	2350	2350	2350	2350	2350	2350
G	Lenght ³	mm	4000	4000	4000	5000	5000	7000	7000
SQUITE Execution Q	Width	mm	2200	2200	2200	2200	2200	2200	2200
SQI	Sound power level	dB(A)	75	75	76	76	76	77	77
LSE			700		780		860		920
Cooling capa		kW	705,0		784,0		861,0		918,0
Power input	1	kW	240,0		293,0		322,0		349,0
EER			2,94		2,68		2,67		2,63
ESEER			4,2		3,9		3,8		3,7
	compressors / circuits		9/4		10 / 4		11 / 4		12 / 4
Water flow ¹		l/h	121177		134814		148106		157956
Water pressi		kPa	42		52		63		72
Expansion ve	essel	liters	50		50		50		50
Water tank		liters	1230		1230		1230		1230
_ %	Height	mm	2350		2350		2350		2350
STANDARD Execution S	Lenght ³	mm	7000		7000		7000		7000
STAN	Width	mm	2200		2200		2200		2200
	Sound power level	dB(A)	93		93		93		93
<u></u> щ –	Height	mm	2350,0		2350,0		2350,0		2350,0
LOW NOISE Execution L	Lenght ³	mm	7000]	7000		7000		7000
Low	Width	mm	2200		2200		2200		2200
	Sound power level	dB(A)	85		85		85		85
<u> </u>	Height	mm	2350		n.d.		n.d.		n.d.
igi					i		i		
Executic Q	Lenght ³	mm	7000		n.d.		n.d.		n.d.
SQUITE Execution Q	Lenght ³ Width	mm mm	7000 2200 77		n.d.		n.d.		n.d. n.d.

^{1 =} performance referred to the standard version with water 12/7°C and air 35°C.
2 = performance referred to the standard version with water 40/45°C and air 7°C relative humidity 90%
3 = Free Cooling versions length + 300 mm

To ask for economical offers concerning the LSE series, you have to fill in all the blanks correspondent to the module of the offer request you find in the next page, and you have to send it to the sales agency.

Here below follows an explanation of the different option reported in the module.

MODEL

 You have to find the model in the table in the previous table, according to the required capacity.

OPERATION

- C only cooling
- H reversible heat pump

VERSION

It is possible to choose among 3 different acoustic version:

- S standard
- L Low Noise (silenced) for a low noise impact
- Q Quite (super silenced) for a very low noise impact

POWER SUPPLY

- -400/3/50 + N
- 400/3/50 230V with built in transformer
- 400/3/50 + N, automatic breakers
- 400/3/50 with built in transformer 230V, automatic breakers

MICROPROCESSOR / EXPANSION VALVE

- BASE (UP TO THE MODEL 476) + ELECTRONIC EXPANSION VALVE
- ADVANCED + ELECTRONIC EXPANSION VALVE

The units are provided with electronic expansion valve as a standard; On request it is possible to realize also units with traditional expansion valve

WATER PUMP

- Not present
- Single pump and expansion vessel;
- Uprated single pump and expansion vessel;
- Double pump for operation in parallel (operation logic AND) + expansion vessel. The management of the logic AND needs the use of the advanced microprocessor control.
- Double uprated pump for operation in parallel (operation logic AND) + expansion vessel. The management of the logic AND needs the use of the advanced microprocessor control.
- Double pump in temporary rotation (operation logic OR) and expansion vessel:
- Double uprated pump pump in temporary rotation (operation logic OR) and expansion vessel;

WATER TANK

- Not present
- Present, integrated in the unit, without modifying the dimensions. It is positioned on the discharge line.

HEAT RECOVERY

- Not present
- Partial (desuperheater 40%). In this case it is compulsory the use of the condensing control.

CONDENSING CONTROL

- Not present
- Modulating control with phase cutting. The variation of the air flow is depending on the condensing pressure. The use of this option allows the operation of the unit in the cooling mode with external air temperature lower than 20°C up to -10°C.

ANTIFREEZE KIT

- Not present
- present, only evaporator
- present, evaporator, pump and expansion vessel
- present, evaporator, pump, expansion vessel and water tank

REMOTE COMMUNICATION

- Not present
- Serial Card RS485 (Carel or Modbus protocol);
- Serial Card Lonworks (available only with the advanced microprocessor control);
- Kit modem GSM for communication via SMS
- Ethernet pCOWEB card (SNMP o BACNET protocol)
- Ethernet pCOWEB card (protocollo SNMP o BACNET) + supervision software HIWEB;

REFRIGERATN ACCESSORIES

- Not present
- Refrigerant Pressure Gauges

EXECUTION OF COILS ON REQUEST

- Standard
- Copper / Copper coils
- Cataphoresis
- Coils with anti corrosion treatment
- Special

PACKAGE

- Standard
- Wooden crate
- Wooden box

INSULATION

- Not present
- Rubber vibration dampers
- Spring vibration dampers

REMOTE CONTROL

- Not present
- simplified
- BASE MICROPROCESSOR
- ADVANCED

INSTALLATION UNIT

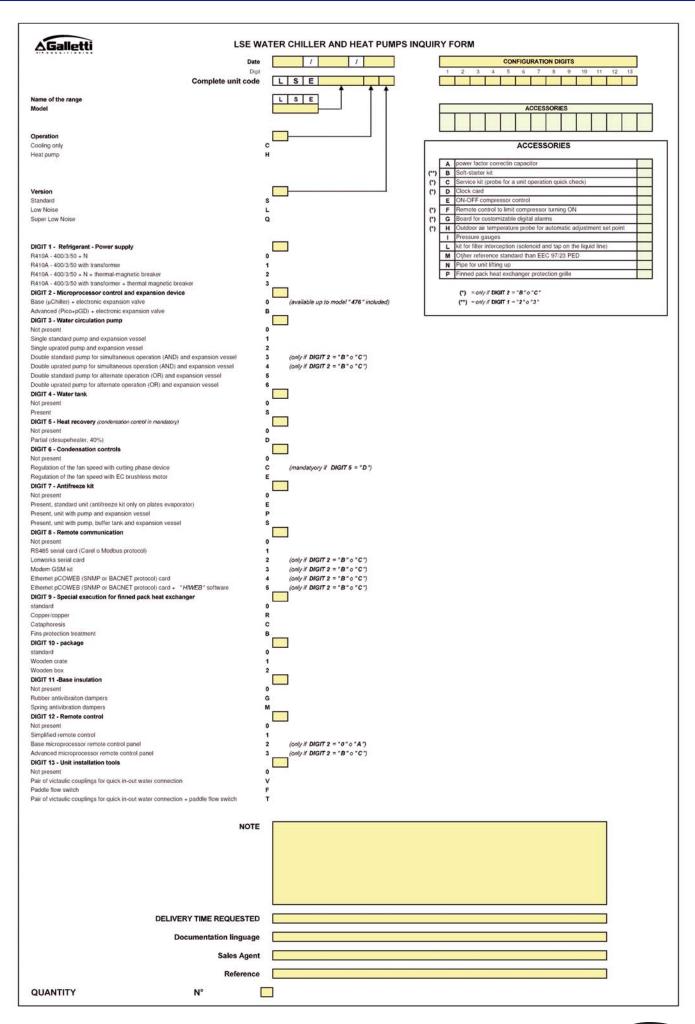
- Not present
- Couple of joints for the fast connection water IN-OUT
- Paddle flow switch
- Couple of joints for the fast connection IN-OUT water + flow switch

ACCESSORIES

- Power factor corrector capacitors;
- Kit soft-starter
- Service kit (kit for the fast diagnostics)
- Clock Card;
- ON-OFF compressor status;
- Remote control for the limitation of the compressor start up;
- Card for configurable digital alarmi:
- Probe for the external air temperature for set-point compensation;
- Refrigerant Pressure Gauges;
- Filter Kit (solenoid valve and liquid line valve)
- Considered Norms different from "97/23/CE PED"
- Lifting pipes of the unit;
- Condensing coil protection grill



46 RG66004964 - Rev.00





Air cooled chillers with screw semihermetic compressors - LCS series

A PLUG&PLAY range, entirely with screw compressors of new generation and high efficiency brazed plate heat exchanger, innovative for some technical solutions which are unique on the market as the management of the FREE COOLING and the management of the electronic valve with control on delivery (patent B02002A000785).

MAIN FEATURES OF THE LCS SERIES

CONFIGURABILITY.

Wide range of available options.

NOISE EMISSION.

The units are characterized by the lowest sound emission in the market and the closed execution of the compressor casing can decrease further the sound emission.

PROTECTION .

The unit is safe, but it can be supplied on request with painted grill for the protection of the coils.

IDRONIC .

All the range is available with a wide set of idronic options, supplied with the correspondent electrical connections, in order to reduce the time and the cost of the installation.

For the whole range it is possible to order the integrated tank

The Y mechanical filter is compulsory for all the versions to protect the evaporator.

ACCESSIBILITY/MAINTENANCE

The compressor is entirely accessible from the side and easily removable with the use of a mechanical arm.

The height is around 1,8 m up to the middle of the "V" of the coils. All the components are easily accessible from the perimeter. In the compressor casing it can be supplied (optional) a Plug connection RS485 for the connectivity of the display closet o the compressor.

The filters can be removed from the same side and can be easily mounted after the purchase of the product.

CONSTRUCTIVE FEATURES

UNIT STRUCTURE

Self-supporting frame made of galvanised steel protected with polyester powder paint enamel (stoved at 180°C) for resistance to atmospheric agents. Stainless steel screws and bolts.

COMPRESSORS

Semi-hermetic screw compressors, direct male rotor / female rotor drive, with crankcase heater. Lubrication ensured by delivery and intake pressure difference.

Integral electronic motor protection and temperature sensors inser ted directly in windings.

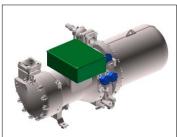
Part winding motor start-up and standard capacity step reduction.

CONDENSERS

High efficiency coils made with raw with copper pipes and aluminium fins.

The finned coils are made with holes

for the drainage of the dirtiness. The bottom support of the coils have got a drainage too in order to allow the cleaning of the coils also in case of free-cooling unit: unique solution in the market.







FANS MOTOR

Axial fans directly coupled to the electrical motor - 3phases- 6 poles, with internal thermal protection with klixon. The protection is IP 54. The fans already includes a protection

EVAPORATOR

Braze welded heat exchangers made of stainless steel AISI 316 (shell and tube only for the sizes 482 and 532). The insulation is made with material expanded material with closed cells.



REFRIGERANT CIRCUIT

It includes: discharge valve of the compressor, liquid valve, charge connection, sight glass, refrigerant filter, thermostatic expansion valve, pressure transducer for high/low pressure values correspondent to the evaporating / condensing temperature, solenoid valve on the liquid line.

ELECTICAL PANEL

The electrical panel in IP 55 execution includes:

- main switch;
- fuse for the protection of the auxiliary and main circuits;
- main switch for the compressor;
- main switch for the fans:
- microprocessor for the control of the following functions: regulation of the water temperature; antifreeze protection;

compressor timing;

automatic rotation of the start up sequence of the compressors; alarm signal.

alarm reset.

Remote signal for alarm;

DISPLAY:

- inlet outlet water temperature;;
- temperature set point setted;
- alarm description:
- counter for the hours of operation and for the number of the start up of the unit, compressors, pumps (if present);
- high/low pressure correspondent to the condensing end evaporating temperature.



CONTROL AND SAFETY DEVICES

- high pressure switch for hand reset;
- low pressure switch for automatic reset;
- mechanical paddle flow switch;
- high temperature protection for the compressors;

All the units are tested in the factory and are supplied with oil and refrigerant.



OPTIONS AVAILABLE

Power supply

- -400V/3ph + N/50Hz
- $400\text{V}\,/\,3\text{ph}\,/\,50\text{Hz}$ with built-in tranformer for 230V power supply auxiliary

Water buffer tank

Integrated in the unit in all the different unit version, it can be match with all

the other options.

Hydraulic pumps

Integrated single or in couple with standard or high pressure head, supplied

together with expansion vessel.

Integrated hydraulic kit

Complet with hydraulic pump, water buffer tank, expansion vessel, safety

valve and shut-off valve.

Antifreeze kit

Automatic self-regulating electrical heater, PTC type, maintaining the water

temperature above 0°C

Electronic expansion valve

It increase the energetic efficienty of the unit, mostly on the part-loaded operation, up to 50%.

Condensation control

Pressostatic type, with the modulation of the condensing air flow. For application with ambient temperatura below -15°C the condensing coil flooding system is available on request.

Low noise version

Besides the standard version, the low noise one in availabel on the price list.

The super low noise one is available on request

Partial heat recovery

It allow To recover the 40% of the total condensing heating rejection. On request it is possibly to have the total recovery system.

Refrigerants

- R 407C
- R 134a for high ambient temperature applications or on customer's request.

Remote Communication / Supervision

Serial Ports available:

- RS232
- RS485

GSM modem with prepaid SIM card and related antenna on board of the unit.

Protocols:

- Carel Built-in
- Modbus Built-in with Advanced Control
- Modbus With external gateway and Basic control
- LonWorksDedicated Serial Port, to be requested with unit order
- BACnet With external gateway
- TCP-IP With external gateway
- TREND Dedicated Serial Port, to be requested with unit order For the available Supervision systems and for other requests the Galletti

Technical Dept. is available to help integrating the controls into different existing systems and/or other SCADA standardized supervision systems.

	Air cooled wa	ter cillie	12 MILII SC	TEW COIII	pressurs	EGO (ECII	mcai ual				
LCS		201	261	272	301	322	351	372	422	482	532
Cooling capacity	kW	202	266	271	300	321	346	375	422	477	531
Rated electrical input	kW	79,9	93,6	104,9	109,7	118,7	121,9	138	158,4	174,3	185,7
Nominal absorbed current	Α	129,6	159,3	179,2	186,0	201,2	207,5	234,4	261,7	12,2	314,2
Power supply	V / ph / Hz					400 / 3	N / 50				
Maximum current absorption	Α	170	202	238	238	278	276	318	354	378	394
Starting current	А	431	542	399	634	440	695	524	615	718	734
Compressor	type					Scr	ew				
Number of compressors/circuits	n°	1/1	1/1	2/2	1/1	2/2	1/1	2/2	2/2	2/2	2/2
Step controls	%	4	4	8	4	8	4	8	8	8	8
Axial fans	n°	8	6	6	6	6	8	8	8	10	10
Air flow	m³/h	68000	124000	124000	116000	116000	168000	168000	168000	192000	17600
Evaporator type					Pla	ate				shella	&tube
Water flow	l/h	34753	45700	46600	51600	55200	59600	64500	72600	82000	91300
Pressure drops, water side	kPa	39	29	30,5	31	35	33	38	33	28	35
Water content, excluding optionals	dm ³	99	30	36	63	30	36	63	69	207	207
Type of hydraulic connection	inches	4	4	4	4	4	5	5	5	5	5
Power pump (option)	kW	4	5,5	5,5	5,5	5,5	7,5	7,5	7,5	9,2	9,2
Available pressure	kPa	199	179	176	172	164	212	204	199	195	182
Water tank (option)	liters	800	600	600	600	600	1230	1230	1230	1230	1230
Expansion vessel (option)	liters	25	25	25	25	25	25	50	50	50	50
Height	mm	1637	2350	2350	2350	2350	2350	2350	2350	2350	2350
Length	mm	4297	3290	3290	3290	3290	4976	4976	4976	4976	4976
Width	mm	1654	2250	2250	2250	2250	2250	2250	2250	2250	2250
Sound power level	dB A	88	90	90	90	90	92	92	92	93	93
Sound pressure level	dB A	60	62	62	62	62	64	64	64	65	65
Sound power level low noise version	dB A	82	84	84	84	84	86	86	86	87	87
Sound pressure level low noise version	dB A	54	56	56	56	56	58	58	58	59	59

⁻Cooling Capacity: water temperature 12 - 7°C, outdoor air temperature 35°C



⁻Sound pressure level; measured in free field, at a distance of 10m, directionality factor Q=2;

MODELS AND CONFIGURATIONS

The LCS series is made of 10 models, only cooling and FREE COOLING operation, standard and low noise version.

The number of constructive options can be selected using the configuration selector below .

The choice of some options can prevent the choice of others or render obligatory other fields. To contact the Galletti for verification

OPTION AND UNIT CONFIGURATION

16 field	ls which	customise the unit complying with customer's requirements
Field	Name	. Description
i iciu	Versio	•
	A	Base(on/off)
	В	Base with modulating air flow with fan speed control
	C	Low noise version without modulating air flow with fan speed control
	M	Low noise version with modulating air flow with fan speed
	 D	Partial heat recover including the modulating air flow with fan speed control
	E	Low noise version + partial heat recover including the modulating air
	_	flow with fan speed
2	Micro	processor / expansions devices
	0	advanced (pCO)+ standard expansion valve
	1	advanced (pCO) + electronic expansion valve
3	Refrig	erant / Power supply
	0	R407C / 400V-3-50Hz+N
	1	R407C / 400V-3-50Hz with transformer for 230V
	2	R407C / 400V-3-50Hz+N with thermal-magnetic
	3	R407C / 400V-3-50Hz with transformer for 230V+thermal-magnetic
	4	R22 / 400V-3-50Hz+N
	5	R22 / 400V-3-50Hz with transformer for 230V
	6	R22 / 400V-3-50Hz+N with thermal-magnetic
	7	R22 / 400V-3-50Hz with transformer for 230V+thermal-magnetic
4	Pumpi	ing units
	0	Not present (STD.)
	1	One Pump STD. (mod. 201322)
	2	Double pump STD. (mod. 201322)
	3	One Pump STD. (mod. 351532)
	4	Double pump STD. (mod. 351532)
	5	Uprated pump (mod. 201322)
	6	Uprated double pump (mod. 201322)
	7	Uprated pump (mod. 351532)
	8	Uprated double pump (mod. 351532)
5	Water	storage tank
	Α	Not present (std.)
	В	only pump
	C	Tank type "1" (600 litres - mod. 201322)
	D	Tank type "2" (1230 litres - mod. 351532)
6	Interfa	ace for supervision system
	0	Not present
	1	Serial port RS485
	2	Serial port RS232
7	Docun	nentation language
	0	Italian
	1	English
	2	German
	S	Other
8		rs pressure
	0	Not present
	1	Refrigerant pressure gauges A/B
	2	Low pressure probes
	3	Low/high pressure probes
	4	Pressure gauges A/B + low pressure probes
	5	Pressure gauges A/B + low/high pressure probes
g	Direct	
	E	EUROPE directive (PED)
10	W	Others
10		filter options
	0	Not present
	1	Grille for coils
	2	Metallic filter for coils
	3	Lowed grilled panels
	4 5	Grilles for coils + lower grilled panels Metallic filter for coils + lower grilled panels

Metallic filter for coils + lower grilled panels

OPTION AND UNIT CONFIGURATION

ield	Name.	Description
1	Antifree	ze electric element options
	Α	not present
	В	present on evaporator
	C	present on evaporator + pump
	D	present on evaporator + pump + tank
2	Compre	ssor options
	0	Not present
	1	Power factors correction capacitors
	2	Suction shut-off-valve
	3	SOFT-STARTER KIT
	4	Suction shut-off-valve + Power factors correction capacitors
	5	SOFT-STARTER KIT + Power factors correction capacitors
	6	SOFT-STARTER KIT + Suction shut-off-valve
	7	SOFT-STARTER KIT + Suction shut-off-valve + Power factors
		correction capacitors
13	Packag	e
	Α	Standard package (squared timber + plastic foil)
	S	Other
4	Remote	control board
	0	not present
	S	semplified
	P	with pCO microprocessor
15	Damper	S
	0	Not present
	G	Rubber antivibration
	M	Spring antivibration
6	Accesso	ories
	0	Not present
	1	Pair of VIC-TAULIC couplings for IN-OUT water connection
	2	Paddle flow-switch (standard differential pressure switch)
	3	ANTI-PANIC button
	4	Paddle flow-switch + ANTI-PANIC button
	5	Paddle flow-switch + Pair of VIC-TAULIC couplings
	6	Pair of VIC-TAULIC couplings + ANTI-PANIC button
	7	Paddle flow-switch + Pair of VIC-TAULIC couplings +
		ANTI-PANIC button
		2005

CODE

It consists of 8 carachters, which show the range, the model, the operation mode and the power supply

	Commercial name of the series
LCS	Air condensed water chillers
	Model
201	Gives information on the heating capacity of the standard models
261	
272	
301	
322	
351	
372	
422	
482	
532	
	Operation
C	WATER CHILLER
	Version
S	STANDARD
L	LOW NOISE



	WATER CHILL	LERS INQUIRY FORM		CONFIGURATION DIGITS
Complete unit co	Digit ode L C	s I	1 2	3 4 5 6 7 8 9 10 11 12 13 14 15
peration mode ooling only unit	c			
Version				
tandarc ow noise	S L			
IGIT 1 - Version				
ase (on/off)	A			
se with modulating condensation control w noise without modulating condensation control	B			
w noise with modulating condensation control	м			
use with partial heat recovery with modulating condensation control with partial heat recovery with modulating condensation control	D E			
GIT 2 - Microprocessor control and expansion device				
vanced + traditional expansion valve vanced + electronic expansion valve	0			
GIT 3 - Refrigerant and power supply 07C / 400V-3-50Hz+N	•			
107C / 400V-3-50Hz with transformer	1			
.07C / 400V-3-50Hz+N with thermal magnetic breakers .07C / 400V-3-50Hz with transformer and thermal magnetic breakers	3			
12 / 400V-3-50Hz+N 12 / 400V-3-50Hz with transformer	4			
12 / 400V-3-50Hz+N with thermal magnetic breakers 12 / 400V-3-50Hz with transformer and thermal magnetic breakers	6 7			
GIT 4 - water circulation pump				
circulation pump agle standard pump (model from 261 to 322)	0 1			
uble standard pump (model from 261 to 322) ngle standard pump (model from 351 to 532)	2			
uble standard pump (model from 351 to 532)	4			
ngle uprated pump (model from 261 to 322) uble uprated pump (model from 261 to 322)	6			
ngle uprated pump (model from 351 to 532) uble uprated pump (model from 351 to 532)	7 8			
GIT 5 - Water tank	A			
TH PUMP/S - NO TANI	В			
nk type "1" (600 liters - models from 261 to 322) nk type "2" (1230 liters - models 351 to 532)	C D			
GIT 6 - Communication options It present				
6485 serial card	1			
S232 serial card IGIT 7 - Documentation language	2			
alian glese	1			
ermar ther	2 S			
ressure probes				
ot present gh/low pressure gauges	1			
ow pressure probe gh/low pressure probes	3			
gh/low pressure gauges and low pressure probe gh/low pressure gauges / probes	4			
IGIT 9 - Standard				
D standarc her	E W			
IGIT 10 - Condenser options of present	0			
ille for coil etallic filter for coils	1 2			
wer grilled panels	3			
ille for coil + lower stallic filter for coils + lower grilled panels	6			
GIT 11 - Antifreeze kit t present	A			
esent on evaporator	В			
esent on evaporator and pump esent on evaporator, pump and tank	C D			
GIT 12 - Compressor options t present	0			
wer factor correction capacitor ction shut-off valve	1			
DFT-STARTER k	3			
ction shut-off valve + power factor correction capacitors PT-STARTER kit + power factor correction capacitor	4 5			
DFT-STARTER kit + suction shut-off valve DFT-STARTER kit + suction shut-off valve + power factor correction capacitor	6			NOTE
GIT 13 - Package				
andard (squared timber + plastic foil) her	A S			
IGIT 14 - Remote control panel ot present	0			
rplified remote control panel croprocessore remote control pane	S P			
GIT 15 - Dampers	4 9			,
ot present ubber type	G	Requested Delivery	/ Time	
ring type	M	Sales a		
ot predent	0			
ir of VIC-TAULIC couplings for IN-OUT water connection iddle flow switch	1 2		erence	
nti-panic button addle flow switch + anti-panic button	3	QUANTITY	N°	I
addle flow switch + pair of victaulic couplings	6			
air of VIC-TAULIC couplings + anti-panic button addle flow switch + pair of victaulic couplings + anti-panic button	7			

Air-condensed water chiller with centrifugal fans MCC

The package air-condensed chillers and heat pumps MCC series are engineered for indoor and ducted installations both residential and commercial.

The MCC series has been engineered and developed with R410A refrigerant and it reaches great high-efficiency levels thanks to the optimization of heat-exchangers, according to plate types and distribution.

The idea of this project gives advantages in terms of dimensions, "turn key" unit, easyness to access all the components in the unit. The logic of the HYDRAULIC PLUG&PLAY (already in the DNA of all the watercondensed series) here is supported by the innovative phylosophy PLUG&PLAY ON THE FANS GROUP: the auto-adaptive control of the continuous modulation flow of the fans (press static condensing control as standard on all the models of the range) reduces drastically the installation time.

PLUG&PLAY ON THE FANS GROUP:

Air flow autoadaptative according to:

- canals pressure drops
- inlet air temperature

The units are equipped with press static condensing control which adjust the number of rounds of the fan (with a cut- phase device) according to air side pressure drops and according to suction air temperature. The air flow can be configured with vertical or horizontal air outlet (optional).

HYDRAULIC PLUG&PLAY

In order to make immediate the application of MCC in the plant, 3 different hydronic kits are available:

- version B: units with only evaporator.
- version P: units equipped with evaporator, electro pump and expansion
- version S: units equipped with evaporator, electro pump and expansion vessel and water tank.
- Mechanical Y filter MANDATORY and as standard on all the versions to protect the evaporator.

SIMPLIFIED MAINTENANCE

The centrifugal fans are coupled directly to the electric motor without pulleys and straps.

The technical / refrigerant compart is completely separated from the ventilation compartment in order to make inspection operations with the unit working.

Control accessible from the outside of the unit.

MICROPROCESSOR CONTROL AND REGULATION

It is brand new and with it it is possible the connection to ERGO

It is possible to connect / modify the unit set point according to external air temperature detected by ambient probe (optional).

The series is made up of 10 models only cooling with cooling capacity from 6 to 37 kW and 10 models in reversible heat pump with heating power from 6 to 41 kW.



AVAILABLE ACCESSORIES

- Refrigerant manometers.
- Antifreezing electric heaters on hydraulic circuit
- Electronic thermostatic valve
- 20% heat recovery (only cooling models)
- Special coils speciali (copper-copper, cataphoresis, Blygold)
- Microprocessor remote control or simplified
- Basic antivibration dampers
- Metallic grilles to protect the batteirs
- Outlet connections



HOW TO ORDER

The range is madde of 10 models cooling only, cwith cooling capacities from 6 to 37 kW and 10 models heat pump operation with heating capacity from 6 to 41 kW

To simplify the way of making the order, Galletti offers 3 different solutions of hydraulic kit built in the unit, for only cooling only and heating pumps units.

In case the required unit has different components not present in the proposed versions, on pages 86 and 93 can be found the price list based on the scheme below indicated, for the configuration of the special unit.

The choice of some options can prevent the choice of some options or oblige the selection of other fields. To contact the Galletti for verification

CODE

	Name
MCC	air condensed water chillers and heat pumps with centrifugal fans
	Model
06	Gives information on the cooling capacity of the standard model
07	
09	
12	
15	
18	
22	
25	
33	
37	
	Typology
C	Water chiller
Н	Heat pump
	Power supply
M	230V - 1 - 50 Hz
0	400V - 3 - 50 Hz
2	400V - 3 - 50 Hz + with thermal-magnetic

OPTION AND UNIT CONFIGURATION

12 fields which customise the unit complying with customer's requirements

Campo	Carat.	Descrizione
1	Expansi	on valve
	0	Thermostatic
	A	Electronic
2	Waterp	
	0	Not present
	1	Pump and epansion vessel
3		torage tank
	0	Not present
	S	Present
4	Heatre	
	0	Not present
_	D	Partial (desuperheater) 20%
5		sing control
•	C	Modulating air flow with fan speed control (standard in all models)
6	Antifree	
	0	Not present
	E P	Present, standard unit Present, unit with pump and tank
	Q	present, unit with evaporator and tank
	S	Present, unit with pump, tank and vessel
,		e control board
'	0	Not present
	S	Simplified
	M	With microprocessor*
8		rant circuit options
	0	Not present
	M	Gauges
9	Remote	control
	0	Not present
	2	RS 485 x ERGO (modbus built in)
10	Special	heat exchanger features
	0	standard
	R	Copper / copper heat exchanger
	C	Cataphoresis
	В	Blygold
11	Coil spe	cial execution
	0	Not present
	R	Protection grille
	F	Metallic filter
12		ssor options
	0	Not present
	1	Power factor correction capacitors
	2	soft starter
	3	Power factor correction capacitors + Soft starter

To be requested at the moment of the order

WATER CHILLERS RATED TECHNICAL DATA										
MCC-C		06M	07M	09M	06	07	09			
Power supply	V - ph - Hz		230-1-50			400-3-50				
Cooling capacity	kW	5,70	6,90	9,20	5,70	6,95	9,25			
MCC CB Total power input	kW	2,61	3,18	4,83	2,58	3,04	4,63			
MCC CP CS Total power input	kW	2,75	3,32	5,20	2,72	3,18	5,00			
Maximum power input	kW	4	5	7	4	5	7			
Maximum current absorption	A	17,10	19,10	33,60	7,50	9,50	17,40			
Starting absorbed current	A	61,56	82,60	100,20	32,60	35,60	51,20			
n° of scroll compressors / circuits		1/1	1/1	1/1	1/1	1/1	1/1			
n° of axial fan		1	1	1	1	1	1			
Air flow	m3/h	2500	2500	5500	2500	2500	5500			
ASEP	Pa	91	85	140	91	85	135			
Water flow	l/s	0,27	0,33	0,44	0,27	0,33	0,44			
Water side pressure drop	kPa	4,10	4,40	36,00	4,10	4,50	36,40			
Available pressure head	kPa	57,00	55,10	155,10	57,10	55,00	154,60			
Diameter of hydrualic connections	п	1	1	1 1/4	1	1	1 1/4			
Water content escluding optionals	dm3	2,50	2,80	3,30	2,50	2,80	3,30			
Expansion tank	dm3	1	1	5	1	1	5			
Buffer tank	dm3	20	20	36	20	20	36			
Height	mm	1000	1000	1160	1000	1000	1160			
Length	mm	1050	1050	1250	1050	1050	1250			
Width	mm	600	600	730	600	600	730			
Sound power level	dB(A)	70	70	78	70	70	78			
Sound pressure level	dB(A)	42	42	50	42	42	50			
Transport weight *	kg	160	165	220	160	165	220			
Operating weight *	kg	168	178	239	168	178	239			
1100 0		40	45	40	00	0.5	0.0			

MCC-C		12	15	18	22	25	33	37
Power supply	V - ph - Hz				400-3-50			
Cooling capacity	kW	12,00	14,60	18,00	22,30	25,50	33,10	36,70
MCC CB Total power input	kW	5,73	6,43	7,53	8,93	12,05	14,85	16,25
MCC CP CS Total power input	kW	6,10	6,80	7,90	9,30	12,60	15,40	16,80
Maximum power input	kW	9,0	9,0	11,0	13,0	17,0	19,0	21,0
Maximum current absorption	Α	19,4	20,4	23,2	25,2	28,4	34,6	38,2
Starting absorbed current	Α	67,2	77,2	104,2	114,2	134,6	162,6	199,6
n° of scroll compressors / circuits		1/1	1/1	1/1	1/1	1/1	1/1	1/1
n° of axial fan		1	1	1	1	2	2	2
Air flow	m3/h	5500	5500	6500	6500	11000	13000	13000
ASEP	Pa	130	120	120	110	125	95	90
Water flow	I/s	1	1	1	1	1	2	2
Water side pressure drop	kPa	39	56	38	45	48	41	38
Available pressure head	kPa	148	125	136	118	123	123	121
Diameter of hydrualic connections	II .	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Water content escluding optionals	dm3	3,5	4,1	4,4	5,0	6,1	7,3	7,8
Expansion tank	dm3	5	5	5	5	8	8	8
Buffer tank	dm3	36	36	96	96	155	155	155
Height	mm	1160	1160	1210	1210	1400	1400	1400
Length	mm	1250	1250	1650	1650	2250	2250	2250
Width	mm	730	730	800	800	800	800	800
Sound power level	dB(A)	78	78	79	79	80	82	82
Sound pressure level	dB(A)	50	50	51	51	52	54	54
Transport weight *	kg	228	240	295	301	405	430	440
Operating weight *	kg	248	260	375	381	546	572	583

$\ensuremath{^{\star}}$ Weights referred to version including pump and buffer tank

- Cooling capacity: outdoor air temperature 35°C, water temperature 12°C / 7°C
 Sound power level measured according to standards ISO 3741 ISO 3744 and EN 29614-1
 Sound pressure level measured at a distance of 10 m and a height of 1.5 m above the ground in a free field (fan side).



HEAT PUMPS RATED TECHNICAL DATA

	IILAI I UMI O IIAI	LD ILUIINI	UAL DAIA					
MCC-H		06M	07M	09M	06	07	09	
Power supply	V - ph - Hz		230-1-50			400-3-50		
Cooling capacity	kW	5,6	6,75	9	5,6	6,8	9,1	
MCC HB Cooling power input	kW	2,61	3,18	4,83	2,58	3,04	4,63	
MCC HP - HS Cooling power input	kW	2,75	3,32	5,2	2,72	3,18	5	
Heating capacity	kW	6,4	7,75	10,2	6,4	7,65	9,95	
MCC HB Heating power input	kW	2,86	3,38	5,2	2,94	3,23	4,9	
MCC HP - HS Heating power input	kW	3	3,52	5,57	3,08	3,37	5,27	
Maximum power input	kW	4	5	7	4	5	7	
Maximum current absorption	A	17,1	19,1	33,6	7,5	9,5	17,4	
Starting absorbed current	A	61,56	82,6	100,2	32,6	35,6	51,2	
n° of scroll compressor / circuits		1/1	1/1	1/1	1/1	1/1	1/1	
n° of axial fan		1	1	1	1	1	1	
Air flow	m3/h	2500	2500	5500	2500	2500	5500	
AESP	Pa	91	85	140	91	85	135	
Water flow in cooling mode	l/s	0,267	0,323	0,431	0,267	0,325	0,433	
Water flow in heat pump	l/s	0,306	0,369	0,488	0,308	0,365	0,477	
Water pressure drop (cooling)	kPa	4	4,3	34,6	4	4,3	34,9	
Water pressure drop (heating)	kPa	5,1	5,4	42	5,1	5,4	42	
Available pressure head (cooling)	kPa	57,4	55,5	156,7	57,4	55,4	156,4	
Available pressure head (heating)	kPa	55,2	52,9	145,4	55	53,2	147,7	
Diameter of hydrualic connections		1	1	1 1/4	1	1	1 1/4	
Water content escluding optionals	dm3	2,5	2,8	3,3	2,5	2,8	3,3	
Expansion tank	dm3	1	1	5	1	1	5	
Buffer tank	dm3	20	20	36	20	20	36	
Height	mm	1000	1000	1160	1000	1000	1160	
Length	mm	1050	1050	1250	1050	1050	1250	
Width	mm	600	600	730	600	600	730	
Sound power level	dB(A)	70	70	78	70	70	78	
Sound pressure level	dB(A)	42	42	50	42	42	50	
Transport weight *	kg	170	180	240	170	180	240	
Operating weight *	kg	173	183	260	173	183	260	
MCC-H		12	15	18	22	25	33	37
Power supply	V - ph - Hz		.0		400-3-50			0,
Cooling capacity	kW	11,7	14,3	17,6	21,8	25	32,4	35,9
MCC HB Cooling power input	kW	5,73	6,43	7,53	8,93	12,05	14,85	16,25
MCC HP - HS Cooling power input	kW	6,1	6,8	7,9	9,3	12,6	15,4	16,8
Heating capacity	kW	13,1	15,5	19,2	23,8	28,2	36,36	40,56
MCC HB Heating power input	kW	6,1	6,72	7,73	9,23	12,35	15,25	16,75
MCC HP - HS Heating power input	kW	6,47	7,09	8,12	9,57	12,85	15,75	17,25
Maximum power input	kW	9	9	11	13	17	19	21
Maximum current absorption	A	19,4	20,4	23,2	25,2	28,4	34,6	38,2
Starting absorbed current	A	67,2	77,2	104,2	114,2	134,6	162,6	199,6
n° of scroll compressor / circuits		1/1	1/1	1/1	1/1	1/1	1/1	1/1
n° of axial fan		1	1	1	1	2	2	2
Air flow	m3/h	5500	5500	6500	6500	11000	13000	13000
AESP	Pa	130	120	120	110	125	95	90
Water flow in cooling mode	Fa	0,561	0,684	0,843	1,043	1,194	1,55	1,715
Water flow in heat pump	l/s	0,626	0,743	0,043	1,138	1,349	1,729	1,713
Water pressure drop (cooling)	kPa	37,2	54,2	36,9	43,7	46	39,41	36,8
Water pressure drop (cooling)	kPa	46	63	44	51	58	48	46
Available pressure head (cooling)	kPa	149,8	128	138,2	120,5	125,3	124,9	123,6
Available pressure head (cooling) Available pressure head (heating)	kPa	138,7	116,2	127,7	120,5	110,6	111,7	108,5
, , ,	KPA "	1 1/4	1 1/4		1 1/4	1 1/4		1 1/4
		1 1/4	ı 1/ 4	1 1/4		1 1/4	1 1/4	7,8
-			/ 1	1.1	_	6 1	7 0	/ X
Water content escluding optionals	dm3	3,5	4,1	4,4	5	6,1	7,3	
Water content escluding optionals Expansion tank	dm3	3,5 5	5	5	5	8	8	8
Water content escluding optionals Expansion tank Buffer tank	dm3 dm3	3,5 5 36	5 36	5 96	5 96	8 155	8 155	8 155
Water content escluding optionals Expansion tank Buffer tank Height	dm3 dm3 mm	3,5 5 36 1160	5 36 1160	5 96 1210	5 96 1210	8 155 1400	8 155 1400	8 155 1400
Water content escluding optionals Expansion tank Buffer tank Height Length	dm3 dm3 mm mm	3,5 5 36 1160 1250	5 36 1160 1250	5 96 1210 1650	5 96 1210 1650	8 155 1400 2250	8 155 1400 2250	8 155 1400 2250
Water content escluding optionals Expansion tank Buffer tank Height Length Width	dm3 dm3 mm mm mm	3,5 5 36 1160 1250 730	5 36 1160 1250 730	5 96 1210 1650 800	5 96 1210 1650 800	8 155 1400 2250 800	8 155 1400 2250 800	8 155 1400 2250 800
Water content escluding optionals Expansion tank Buffer tank Height Length Width Sound power level	dm3 dm3 mm mm dB(A)	3,5 5 36 1160 1250 730 78	5 36 1160 1250 730 78	5 96 1210 1650 800 79	5 96 1210 1650 800 79	8 155 1400 2250 800 80	8 155 1400 2250 800 82	8 155 1400 2250 800 82
Diameter of hydrualic connections Water content escluding optionals Expansion tank Buffer tank Height Length Width Sound power level Sound pressure level Transport weight *	dm3 dm3 mm mm mm	3,5 5 36 1160 1250 730	5 36 1160 1250 730	5 96 1210 1650 800	5 96 1210 1650 800	8 155 1400 2250 800	8 155 1400 2250 800	8 155 1400 2250 800

* Weights referred to version including pump and buffer tank

Transport weight *

Operating weight *

- Cooling capacity: outdoor air temperature 35°C, water temperature 12°C / 7°C
 Heating capacity: outdoor air temperature 7°C dry bulb and 6.2°C wet bulb, water temperature 40°C/45°C
- Sound power level measured according to standards ISO 3741 ISO 3744 and EN 29614-1
- Sound pressure level measured at a distance of 10 m and a height of 1.5 m above the ground in a free field (fan side).

kg

kg

245

265

250

270

310

388

342

436

450

601

475

627



485

Indoor Air cooled chillers LCC (ductable)

The indoor air condensed water chillers and heat pumps model LCC ,have been designed for domestic and industrial installations for 24 hours daily operations.

The range is made of 10 models only cooling and heat pumps, realized in standard and low noise version, with cooling capacity from 48 to 153 Kw and in heat mode from 54 to 168 Kw.

 LCC CS
 only cooling , standard version

 LCC CL
 only cooling , low noise version

 LCC HS
 heat pump , standard version

 LCC HL
 heat pump , low noise version

 LCC FS
 free cooling , standard version

 LCC FL
 free cooling , low noise version

The design philosophy has favored the subjects

of the compact dimensions, and the easy access

to all the components inside the unit: The logic

of the Plug & Play on the hydraulic side- already

present (DNA) in all our water chillers models -

here is going alongside with the Plug & Play on

the fans group: Auto - adaptive control of the air

flow and the constant fan speed modulations

The wide possible configurations of the Air flow,

in terms of range of products available, or in terms

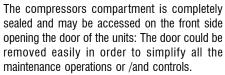
of available accessories, makes the LCC range

the perfect product for reducing the installation

reduces the installation costs and timing...

The LCC units are built with a monobloc supporting base and enclosing panels made with coated and painted galvanized sheet steel with RAL

7016.



All bolts, screws and fastening devices are made of non-oxidizable materials, inox or carbon steel has undergone surface - passivating treatments.

VENTILATION SECTION

The units comprise centrifugal fans with backward profile directly connected to the motor provided with external rotor.

The backward profile fan has high reaction grade (the main energy is transmitted as a pressure energy) witch allowed to realize working static efficiencies up to 5-6% comparing to solutions with standard Forward profile fans.

All the fans are statically and dynamically balanced ,with interposed rubber vibration dampers to reduce the propagation of vibrations during speed -modulating phases.

The fans are equipped with 4 poles motors provided with an external rotor. This solution allowed the power efficiency maximization, and the reduction of the magnetic sound level if the unit is provided with phase cutting devise (optional)

The layout of the fans, made in aluminum, allowed an easy vertical air discharge to the condenser side.

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.

All the units are built with a dual independent cooling circuit.



CONSTRUCTIVE FEATURES



HEAT EXCHANGERS. WATER SIDE

COMPRESSORS

units, both in single

protection on windings an

All units have heat exchangers with braze-welded AISI 304 austenitic stainless steel plates and connections made of AISI 304 L, characterized by a reduced carbon content to facilitate brazing. All units have a "cross flow" type dual circuit exchanger on the refrigerant side and a single circuit exchanger on the water side to ensure maximum energy efficiency when the system is operating under partial loads.

Only scroll-type compressors are used in the LCC

and tandem configurations, with thermal

crankcase electric heater (heat pump models).

FINNED BLOCK CONDENSER

Built with " aluminum fins" and "copper expanded piping" to ensure the maximum contact. The condenser could be provided with a metallic filter easily removable from the two sides even if the units is ducted.

For the heating pump versions, all units are provided with an Inox dray trip panel for the water condensate collection and the possibility to duct it.

WATER CIRCUIT

All the units have a single plumbing connection to the

outside. This feature is important as it reduces the time necessary for making connections on the installation site..

A water flow control device is included as a standard feature of all units. In the event the water

PLUS of the LCC range

PLUG & PLAY ON THE FANS GROUP

costs and timing on site.

- Innovative fan technology ,more efficient and reliable with the Backward profile centrifugal fans directly connected to the motor provided with external rotor.
- The Auto-adaptive control of the air flow and the constant fan speed modulations reduces the installation costs and timing
- Not requested Maintenance as per traditional belt/pulley transmission.
- · Possibility to change the air discharge side even on site

PLUG & PLAY ON THE HYDRAULIC SIDE

- Only one hydraulic connection (In/Out) to the system
- · Availability of " built in" hydraulic kit

STRUCTURE

- The same height and width for all sizes allowed a parallel installation even with different sizes
- Frontal access while the unit is running to all the components inside the unit by the means of easily removable doors and isolated technical compartment from the air flow.
- All Hydraulic and electric connection to the front side.

INTERCONNECTIVITY

- With BMS and even with Galletti new ERGO system
- Possibility of " parallel" operation up to 8 units(advanced microprocessor)



56 RG66004964 - Rev.00

MODELS AND CONFIGURATIONS

The LCC series is made of 10 models, cooling, heat pump and free cooling operation, standard and low noise version. The number of constructive options can be selected using the configuration selector below.

The choice of some options can prevent the choice of others or render obligatory other fields. To contact the Galletti for verification

Code

	Commercial name of the series
LCC	Air condensed water chiller and reversible heat pump
	Model
050	Gives information on the heating capacity of the standard models
060	
070	
080	
090	
105	
115	
130	
145	
160	
	Operation
C	cooling only
Н	heat pump
F	free cooling
	Version
S	standard with modulating condensing control
L	Low noise with modulating condensing control

OPTION AND UNIT CONFIGURATION

15 fields which customise the unit complying with customer's requirements

Field	Name.	Description
1	Refriger: 0	ant / Power supply R407C - 400/3/50 with 230V built in transformer
	1	R22 - 400/3/50 with 230V built in transformer
	2	R407C - 400/3/50 with 230V built in transformer, thermal-magnetic
		protection in the EP
	3	R22 - 400/3/50 with 230V built in transformer, thermal-magnetic
		protection in the EP
2		ocessor / expansions devices
	0 A	basic (μchiller) + traditional valve * basic (μchiller) + electronic valve *
	В	advanced (pCO) + traditional valve
	C	advanced (pCO) + electronic valve
3	Water p	ump
	0	not present
	1	Pump and expansion vessel *
	2 3	Double pump and expansion vessel * Uprated pump and expansion vessel
	4	Double uprated pump and expansion vessel
4	Water to	
	0	not present
	S	present *
5	Heat Re	
	0 D	not present
6		partial (desuperheater) 40% ing and air flow control
•	R	Rear side air discharge
	H	Vertical air discharge
7	Remote	comunication
	0	not present
	1	RS232 (only for the pCO1 control)
8	2 Compre	RS485
0	Compres	not present
	K	Power factor correction capacitors
	Α	kit soft-starter
	M	Power factor correction capacitors + kit soft starter
9		ser protection
	0	not present
	G F	condenser protection grille air filter for condenser
10	Remote	
	0	not present
	S	Semplified
	M	with µChiller microprocessor
	P	with pCO microprocessor
11	Flanges 0	not present
	M	Outlet flanges
	Α	Inlet flanges
	T	Outlet and inlet flanges
12	Package	
	0	standard
	G	Wooden crate
13	C Accesso	Wooden box
ıv	0	not present
	Ā	Base vibration dampers
	M	Pressure gauges
	T	Base vibration dampers + Pressure gauges
14		ntation language
	0 1	italian english
	2	english german
	S	other
15		manufacture
	0	standard
	S	special



^{*} Not available for free cooling version

	WATER CHILLE	RS RATED TE	CHNICAL DATA			
LCC - CS		50	60	70	80	90
Cooling capacity	kW	48,7	56	65,2	68,8	88,2
Rated electrical input	kW	22,4	25,9	28	32,8	38,5
Rated current absorption	A	41,2	46	49,2	58	67,3
Power supply	V - ph - Hz	·		400-3-50 + N		· · · · · · · · · · · · · · · · · · ·
Maximum current absorption	 A	65	69	73	79	98
Starting current	A	163	171	190	214	269
Number of scroll compressors/circuits	n°	38750	38750	38750	38750	38750
Axial fans	n°	2	2	2	2	3
Air flow rate	m3/h	17500	19000	19000	19000	27000
Available static pressure	Pa	400	310	250	250	290
Front surface of condenser coils	m2	2,3	2,3	2,3	2,3	2,8
Evaporator	n°	1	1	1	1	1
Water flow rate	l/h	8377	9631	11215	11833	15171
Pressure drops, water side	kPa	30	26	35	28	29
Water content, excluding optionals	dm3	6,1	6,6	7,1	7,9	32
Buffer tank (optional)	dm3	340	340	340	340	340
Hidraulic connection type		GAS	GAS	GAS	GAS	GAS
Plumbing connections	inches	2"	2"	2"	2"	2"
Height	mm	2020	2020	2020	2020	2020
Length	mm	2000	2000	2000	2000	2400
Width	mm	1100	1100	1100	1100	1100
Sound power level	dB A	79	81	81	81	82
Sound pressure level	dB A	71	73	73	73	74
Sound power level low noise version	dB A	75	77	77	77	78
Sound pressure level low noise version	dB A	67	69	69	69	70
LCC - CS		105	115	130	145	160
Cooling capacity	kW	98	109,1	125,9	143	152,8
Rated electrical input	kW	44,8	51,1	56,2	63,9	71,4
Rated current absorption	A	76,6	86,9	94,6	106,1	117,4
Power supply	V - ph - Hz	,	,	400-3-50 + N	,	,
Maximum current absorption	 A	113	142	160	178	192
Starting current	A	291	346	378	415	446
Number of scroll compressors/circuits	n°	38750	38750	38750	38750	38750
Axial fans	n°	3	4	4	4	4
Air flow rate	m3/h	27000	36000	36000	40000	40000
Available static pressure	Pa	290	250	250	150	150
Front surface of condenser coils	m2	2,8	3,6	3,6	3,6	3,6
Evaporator	n°	1	1	1	1	1
Water flow rate	l/h	16855	18765	21654	24596	26281
Pressure drops, water side	kPa	34	30	35	31	36
Water content, excluding optionals	dm3	33,5	34,1	36,2	38,1	40,2
Buffer tank (optional)	dm3	340	340	340	340	340
Hidraulic connection type		GAS	Victaulic	Victaulic	Victaulic	Victaulic
Plumbing connections	inches	2"	3"	3"	3"	3"
Height	mm	2020	2020	2020	2020	2020
Length	mm	2400	3090	3090	3090	3090
Width	mm	1100	1100	1100	1100	1100
Sound power level	dB A	82	86	86	89	89
Sound pressure level	dB A	74	78	78	81	81
Sound power level low noise version	dB A	78	79	79	83	83
Sound pressure level low noise version	dB A	70	71	71	75	75
Count procedure reversely HUISE VERSION	uυ Λ	7.0	/ 1	/ 1	7.0	10

⁻ Cooling capacity: outdoor air temperature 35° C, water temperature 12° C / 7° C, Sound power measured according to standards ISO 3741 - ISO 3744 and EN 29614-1, Sound pressure measured at a distance of 1 m and a height of 1.5 m above the ground in a open field, available static pressure 100° Pa



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HEAT PUMPS RATED TECHNICAL DATA											
LCC - HS		50	60	70	80	90					
Cooling capacity	kW	47,2	54,3	63,2	66,7	85,6					
Rated electrical input in cooling mode	kW	22,4	25,9	28	32,8	38,5					
Rated current absorption in cooling mode	Α	41,2	46	49,2	58,1	67,3					
Heating capacity	kW	54	61,6	72,2	79,8	97,2					
Rated electrical input in heating mode	kW	22	24,6	27,6	30,8	37,5					
Rated current absorption in heating mode	Α	40,7	44,4	48,7	55,3	66,1					
Power supply	V - ph - Hz			400-3-50 + N							
Max current absorbed	Α	65	69	73	79	98					
Starting current	Α	163	171	190	214	269					
Number of compressors/circuits	n°	2/2	2/2	2/2	2/2	2/2					
Axial fans	n°	2	2	2	2	3					
Air flow rate	m3/h	17500	19000	19000	19000	27000					
Available static pressure	Pa	400	310	250	250	290					
Front surface of condenser coils	m2	2,3	2,3	2,3	2,3	2,8					
R407C/water exchanger	n°	1	1 0040	1 10070	11.470	1 4745					
Water flow rate in cooling mode	I/h	8120	9342	10879	11478	14715					
Pressure drops, water side in cooling mode	kPa	30	26	35	28	29					
Water flow rate in heating mode Pressure drops, water side in heating mode	I/h kPa	9288 34	10596 32	12418 40	13725 35	16719 32					
Water content, excluding optionals	dm3	6,1	6,6	7,1	7,9	32					
Buffer tank (optional)	dm3	340	340	340	340	340					
Plumbing connections	inches	2"	2"	2"	2"	2"					
Height	mm	2020	2020	2020	2020	2020					
Length	mm	2000	2000	2000	2000	2400					
Width	mm	1100	1100	1100	1100	1100					
Sound power level	dB A	79	81	81	81	82					
Sound pressure level	dB A	71	73	73	73	74					
Sound power level low noise version	dB A	75	77	77	77	78					
Sound pressure level low noise version	dB A	67	69	69	69	70					
LCC - HS		105	115	130	145	160					
	kW	95,1	105,8	122,1	138,7	148,2					
Cooling capacity Rated electrical input in cooling mode	kW	44,8	51,1	56.2	63.9	71,4					
Rated current absorption in cooling mode	A	76,3	86,3	94,6	106,1	117,4					
Heating capacity	kW	108	129	139,8	155	168					
Rated electrical input in heating mode	kW	42,3	50,7	54,9	59,6	64,9					
Rated current absorption in heating mode	A	73	85,8	93	100,4	108,6					
Power supply	V - ph - Hz	70	00,0	400-3-50 + N	100,4	100,0					
Max current absorbed	A A	113	142	160	178	192					
Starting current	A	291	346	378	415	446					
Number of compressors/circuits	n°	2/2	2/2	2/2	2/2	2/2					
Axial fans	n°	3	4	4	4	4					
Air flow rate	m3/h	27000	36000	36000	40000	40000					
Available static pressure	Pa	290	250	250	150	150					
Front surface of condenser coils	m2	2,8	3,6	3,6	3,6	3,6					
R407C/water exchanger	n°	1	1	1	1	1					
Water flow rate in cooling mode	l/h	16350	18202	21004	23857	25493					
Pressure drops, water side in cooling mode	kPa	34	30	35	31	36					
Water flow rate in heating mode	l/h	18576	22189	24046	26660	28896					
Pressure drops, water side in heating mode	kPa	39	36	42	35	40					
Water content, excluding optionals	dm3	33,5	34,1	36,2	38,1	40,2					
Tracer content, externally opposition		340	340	340	340	340					
Buffer tank (optional)	dm3										
Buffer tank (optional) Plumbing connections	dm3 inches	2"	3"	3"	4"	4"					
Buffer tank (optional) Plumbing connections Height		2" 2020	2020	2020	2020	2020					
Buffer tank (optional) Plumbing connections Height Length	inches	2" 2020 2400	2020 3090	2020 3090	2020 3090	2020 3090					
Buffer tank (optional) Plumbing connections Height Length Width	inches mm mm mm	2" 2020 2400 1100	2020 3090 1100	2020 3090 1100	2020 3090 1100	2020 3090 1100					
Buffer tank (optional) Plumbing connections Height Length Width Sound power level	inches mm mm mm dB A	2" 2020 2400 1100 82	2020 3090 1100 86	2020 3090 1100 86	2020 3090 1100 89	2020 3090 1100 89					
Buffer tank (optional) Plumbing connections Height Length Width Sound power level Sound pressure level	inches mm mm mm dB A dB A	2" 2020 2400 1100 82 74	2020 3090 1100 86 78	2020 3090 1100 86 78	2020 3090 1100 89 81	2020 3090 1100 89 81					
Buffer tank (optional) Plumbing connections Height Length Width Sound power level	inches mm mm mm dB A	2" 2020 2400 1100 82	2020 3090 1100 86	2020 3090 1100 86	2020 3090 1100 89	2020 3090 1100 89					

⁻ Cooling capacity: outdoor air temperature 35° C, water temperature 12° C / 7° C, Heating capacity: outdoor air temperature 7° C dry bulb and 6.2° C wet bulb, water temperature 40° C / 45° C, Sound power measured according to standards ISO 3741 - ISO 3744 and EN 29614-1 Sound pressure measured at a distance of 1 m and a height of 1.5 m above the ground in a open field, available static pressure 100 Pa



MCW Package water condensed water chillers and heat pumps

MCW chillers, heat pumps and motor driven evaporating units are designed for residential and light-duty commercial applications and in some cases for industrial applications with 24 h/day operation.

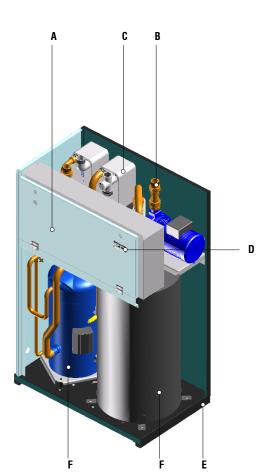
MCW chillers are available in a completely enclosed version for a low noise operation, thanks to the use of scroll-type compressors. Thanks to their compact dimensions, the pre-assembled hydraulic components and their attractive design, they are suitable for a variety of environments and do not need to be installed in dedicated rooms. The design philosophy has favoured the development of units having a reduced height with water or cooling (MCR) connections from above and pre-assembled piping system, which reduce installation time and costs and the need for technical space.

The large number of sizes making up the series and the available accessories allow a broad range of possible configurations, which make the MCW series an ideal solution for speeding up installation on the building site.

Only top quality components are used for the cooling, hydraulic and electric systems guaranteeing high technical level of the MCW chillers in terms of efficiency, reliability and reduced noise levels.

All the units are available in single circuit configurations.





- A The electric control board is constructed and wired in accordance with EEC Directive 72/23, Directive 89/336 on electromagnetic compatibility and related standards.
- B All the units have plumbing connections upwards, thus contributing to a considerable reduction of the minimum clearance for installation and maintenance operations. A water flow control device is available upon request. In addition to this device an outlet water temperature sensor is available, that performs the function of an antifreeze thermostat.
- Only heat exchangers with stainless steel braze-welded plates are used.
- D Microprocessor control; the Basic version featured on standard models is a μ Chiller controller.
- Painted galvanised sheet steel supporting base. Panelling: enclosing panels made of galvanised sheet steel coated with epoxy polyester powder (RAL 7035) contribute to an attractive design suitable for installations in residential environments.
- F Upon request the units can be equipped with built-in water pump and water storage reservoir, the latter being placed on the water circuit outlet user side.
- **G** Only Scroll-type compressors are used in all MCW units



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MODELS AND CONFIGURATIONS

The **MCW** series is composed by 11 models, in cooling and heating version. They are available both in models with a cooling function only and in models with heat pump operation.

The numerous constructive options may be selected using the configuration scheme illustrated below.

The choice of some options can prevent the choice of others or render obligatory other fields. To contact the Galletti for verification

CODE

It consists of 8 carachters, which show the range, the model, the operation mode and the power supply

	Commercial name of the series
MCW	water condensed water chiller and heat pump
	Model
005	provides general indications as to the cooling capacity of standard models
007	
010	
012	
015	
018	
020	
022	
027	
031	
039	
	Operation
C	cooling only
Н	heat pump
	Version
S	standard
L	low noise

OPTION AND UNIT CONFIGURATION

15 fields which customise the unit complying with customer's requirements

Field	Name.	Description
	Refriger	ant / Power supply
	0	R407C - 230/1/50
	1	R407C - 400/3/50 + N
	2	R407C- 400/3/50 with 230V built-in transformer for functions
		requiring 230V power supply
2	Micropr	ocessor / Exp. valve
	0	basic + traditional valve
	Α	basic + electronic valve
}	Conden	sation control
	0	not present
	C	with adjustment of water flow rate
		nd water tank
	0	not present
	1	pump only
	2	pump and tank
j		remote comunication
	0	not present
	2	RS485
j	Cooling	accessories
	0	not present
	M	Pressure gauges
	Compre	ssor options
	0	not present
3	Water o	condenser option
	0	Standard: oversized condenser for city water/dry cooler
		control board
	0	not present
	S	simplified
	M	μChiller microprocessor
0	Packag	e
	0	standard
	1	wooden crate
	2	wooden box
1	Dampei	
	0	not present
	G	base vibration dampers (rubber type)
2	Accesso	pries
	0	not present
3	Dry coo	ler / remote condenser
	0	not present
	A	Dry Cooler
	В	Dry Cooler with condensing control
4		ler / remote condenser
	0	not present
	1	standard version: horizontal air flow
	2	standard version: vertical air flow
	3	low-noise version: horizontal air flow
	4	low-noise version: vertical air flow
5	Executi	
	0	standard
	S	special



Mathematic		WATER CH	IILLERS R <i>i</i>	ATED TECHNIC	CAL DATA				
Source S	MCW - CS / CL		005 M	005	007 M	007	010 M	010	012
Rated current absorbed	-	kW				7	9,9		
Rated current absorbed			,					*	
Maximum current absorbed	Rated current absorbed	А		3,17	8,27	3,47	11,21	4,71	6,7
Sacring arrayere	Power supply	V - ph - Hz	230-1-50	400-3-50 + N	230-1-50	400-3-50 + N	230-1-50		400-3-50 + N
Evaporator water flow 1/h 954 946 1211 1203 1703 1704 2088 Evaporator water pressure drop 187a 28 27 31 31 27 27 31 31 31 27 27 31 31 31 37 27 31 31 31 37 37 31 31 3	Maximum current absorbed	A	12	4,2	15	5,1	23,1	7	10
Peaporator water pressure drop kPa 28 27 31 31 27 27 31 31 27 27 31 31 30 306 498 494 605 603 639 649 605 603 649 649 605 603 649 649 655 653 649 649 649 655 653 649 649 649 655 653 649 64	Starting ampere	А	47	24	61	32	100	46	50
Condenser water flow Vin 390 386 498 494 695 693 693 694	Evaporator water flow	I/h	954	946	1211	1203	1703	1704	2098
Condenser water pressure drop KPa	Evaporator water pressure drop	kPa	28	27	31	31	27	27	31
Scroll compressor / refrigerant circuit	Condenser water flow	l/h	390	386	498	494	695	693	849
Water content on user side dm3 2.1 2.1 2.1 2.1 2.1 2.1 2.6 2.6 2.6 Pump available head (option) kPa 77 78 68 69 60 60 124 Pump power supply kW 0.25 0.26 0.27 0.21 0.20 0.21 0.20 0.21 0.20 0.21 0.20 0.21 0.21 0.21 0.20 0.25	Condenser water pressure drop	kPa	4	4	6	6	5	5	7
Pump available head (option) KPa 77 78 68 69 60 60 124 Pump power supply KW 0.25 0.25 0.25 0.25 0.25 0.25 0.25 Pump power supply KW 0.25 0.25 0.25 0.25 0.25 Pump power supply KW 0.25 0.25 0.25 0.25 0.25 Pump power supply KW 0.25 0.25 0.25 0.25 0.25 Pump power supply KW 0.25 0.25 0.25 0.25 0.25 Pump power supply KW 0.25 0.25 0.25 0.25 0.25 Pump power supply KW 0.33 0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30 Pump power supply KW 0.35 0.35 0.35 0.35 0.35 0.35 Pump power supply KW 0.35 0.35 0.35 0.35 0.35 0.35 Pump power supply KW 0.35 0.35 0.35 0.35 0.35 0.35 Pump power supply KW 0.34 0.35 0.35 0.35 0.35 0.35 Pump supply KW 0.35 0.35 0.35 0.35 0.35 0.35 Pump supply KW 0.35 0.35 0.35 0.35 0.35 0.35 Pump supply KW 0.34 0.35 0.35 0.35 0.35 0.35 Pump supply KW 0.34 0.35 0.35 0.35 0.35 0.35 Pump supply V - ph - Hz Pump supply V - ph - Hz V - ph - Ph - Ph - Ph - Ph - Ph - Ph - Ph	Scroll compressor / refrigerant circuit	Nr.	1/1	1/1	1/1	1/1	1/1	1/1	1/1
Pump power supply	Water content on user side	dm3	2,1	2,1	2,1	2,1	2,6	2,6	2,6
Buffer tank water content (option)	Pump available head (option)	kPa	77	78	68	69	60	60	124
Hydraulic connections	Pump power supply	kW	0,25	0,25	0,25	0,25	0,25	0,25	0,33
Height	Buffer tank water content (option)	dm3	47	47	47	47	47	47	92
Length	Hydraulic connections		1"	1"	1"	1"	1"	1"	1" 1/2
Width mm 453 453 453 453 453 508 Weight of standard unit kg 103 1103 1106 106 108 118 MCW-CS sound power level dB(A) 55 55 55 55 59 59 61 MCW-CS cound power level dB(A) 53 53 53 57 57 59 MCW-CS cound power level dB(A) 53 53 53 57 57 59 MCW-CS CCL 015 018 020 022 027 031 039 Cooling capacity kW 14,9 17,8 20,2 21,9 26,9 31,2 38,7 Rated power input kW 3,4 3,95 4,4 4,9 6,3 7,2 8,9 Rated power input A 8,58 9,39 11,22 12,0 15,56 18,12 21,1 Power supply V - p1-Hz 2 40-3-50+ N 40 <t< td=""><td>Height</td><td>mm</td><td>830</td><td>830</td><td>830</td><td>830</td><td>830</td><td>830</td><td>1270</td></t<>	Height	mm	830	830	830	830	830	830	1270
Weight of standard unit kg 103 103 106 106 108 108 118 MCW-CS sound power level dB(A) 55 55 55 55 55 59 59 61 MCW-CL sound power level dB(A) 53 53 53 53 57 57 59 MCW-CL sound power level dB(A) 53 53 53 53 57 57 59 MCW-CS / CL	Length	mm	705	705	705	705	705	705	812
MCW-CS sound power level dB(A) 55 55 55 55 59 59 61 MCW-CL sound power level dB(A) 53 53 53 53 57 57 59 MCW-CS /CL 015 018 020 022 027 031 039 Cooling capacity kW 14,9 17,8 20,2 21,9 26,9 31,2 38,7 Rated power input kW 3,4 3,95 4,4 4,9 6,3 7,2 8,9 Rated current absorbed A 8,58 9,39 11,22 12,04 15,56 18,12 21,1 Power supply V - ph - Hz 400-3-50 + N 400-3-5	Width	mm	453	453	453	453	453	453	508
MCW-CL sound power level dB(A) 53 53 53 53 57 57 59 MCW - CS / CL 015 018 020 022 027 031 039 Cooling capacity kW 14,9 17,8 20,2 21,9 26,9 31,2 38,7 Rated power input kW 3,4 3,95 4,4 4,9 6,3 7,2 8,9 Rated power input A 8,58 9,39 11,22 12,04 15,56 18,12 21,1 Power supply V - Ph - Hz 400-3-50 + N Maximum current absorbed A 13 14 16 17 20 29 32 Starting ampere A 66 74 101 98 130 130 135 Evaporator water flow I/h 2562 3062 3458 3766 4627 5367 6656 Evaporator water pressure drop kPa 27 30 26 29 <td>Weight of standard unit</td> <td>kg</td> <td>103</td> <td>103</td> <td>106</td> <td>106</td> <td>108</td> <td>108</td> <td>118</td>	Weight of standard unit	kg	103	103	106	106	108	108	118
MCW - CS / CL	MCW-CS sound power level	dB(A)	55	55	55	55	59	59	61
Cooling capacity kW 14,9 17,8 20,2 21,9 26,9 31,2 38,7 Rated power input kW 3,4 3,95 4,4 4,9 6,3 7,2 8,9 Rated current absorbed A 8,58 9,39 11,22 12,04 15,56 18,12 21,1 Power supply V - ph - Hz 400-3-50 + N Maximum current absorbed A 13 14 16 17 20 29 32 Starting ampere A 66 74 101 98 130 130 135 Evaporator water flow 1/h 2562 3062 3458 3766 4627 5367 6656 Evaporator water flow 1/h 1039 1235 1392 1522 1885 2181 2703 Condenser water flow 1/h 1039 1235 1392 1522 1885 2181 2703 Condenser water flow 1/h 1039 1235	MCW-CL sound power level	dB(A)	53	53	53	53	57	57	59
Rated power input	MCW - CS / CL		015	018	020	022	027	031	039
Rated current absorbed A 8,58 9,39 11,22 12,04 15,56 18,12 21,1 Power supply V - ph - Hz 400-3-50 + N Maximum current absorbed A 13 14 16 17 20 29 32 Starting ampere A 66 74 101 98 130 130 135 Evaporator water flow I/h 2562 3062 3458 3766 4627 5367 6656 Evaporator water pressure drop kPa 27 30 26 29 26 29 28 Condenser water pressure drop kPa 4 6 5 6 5 7 7 Scroll compressor / refrigerant circuit Nr. 1/1	Cooling capacity	kW	14,9	17,8	20,2	21,9	26,9	31,2	38,7
Power supply V - ph - Hz	Rated power input	kW	3,4	3,95	4,4	4,9	6,3	7,2	8,9
Maximum current absorbed A 13 14 16 17 20 29 32 Starting ampere A 66 74 101 98 130 130 135 Evaporator water flow I/h 2562 3062 3458 3766 4627 5367 6656 Evaporator water pressure drop kPa 27 30 26 29 26 29 28 Condenser water flow I/h 1039 1235 1392 1522 1885 2181 2703 Condenser water pressure drop kPa 4 6 5 6 5 7 7 Scroll compressor / refrigerant circuit Nr. 1/1	Rated current absorbed	Α	8,58	9,39	11,22	12,04	15,56	18,12	21,1
Starting ampere A 66 74 101 98 130 130 135 Evaporator water flow I/h 2562 3062 3458 3766 4627 5367 6656 Evaporator water pressure drop kPa 27 30 26 29 26 29 28 Condenser water flow I/h 1039 1235 1392 1522 1885 2181 2703 Condenser water pressure drop kPa 4 6 5 6 5 7 7 Scroll compressor / refrigerant circuit Nr. 1/1 <t< td=""><td>Power supply</td><td>V - ph - Hz</td><td></td><td></td><td></td><td>400-3-50 + N</td><td></td><td></td><td></td></t<>	Power supply	V - ph - Hz				400-3-50 + N			
Evaporator water flow I/h 2562 3062 3458 3766 4627 5367 6656 Evaporator water pressure drop kPa 27 30 26 29 26 29 28 Condenser water flow I/h 1039 1235 1392 1522 1885 2181 2703 Condenser water pressure drop kPa 4 6 5 6 5 7 7 Scroll compressor / refrigerant circuit Nr. 1/1	Maximum current absorbed	Α	13	14	16	17	20	29	32
Evaporator water pressure drop kPa 27 30 26 29 26 29 28 Condenser water flow I/h 1039 1235 1392 1522 1885 2181 2703 Condenser water pressure drop kPa 4 6 5 6 5 7 7 Scroll compressor / refrigerant circuit Nr. 1/1 </td <td>Starting ampere</td> <td>Α</td> <td>66</td> <td>74</td> <td>101</td> <td>98</td> <td>130</td> <td>130</td> <td>135</td>	Starting ampere	Α	66	74	101	98	130	130	135
Condenser water flow I/h 1039 1235 1392 1522 1885 2181 2703 Condenser water pressure drop kPa 4 6 5 6 5 7 7 Scroll compressor / refrigerant circuit Nr. 1/1 1/2 1/2 1/2 1/	Evaporator water flow	l/h	2562	3062	3458	3766	4627	5367	6656
Condenser water pressure drop kPa 4 6 5 6 5 7 7 Scroll compressor / refrigerant circuit Nr. 1/1	Evaporator water pressure drop	kPa	27	30	26	29	26	29	28
Scroll compressor / refrigerant circuit Nr. 1/1	Condenser water flow	l/h	1039	1235	1392	1522	1885	2181	2703
Water content on user side dm3 3,1 3,1 3,6 3,6 3,9 4,3 4,6 Pump available head (option) kPa 113 92 135 125 106 82 129 Pump power supply kW 0,33 0,33 0,45 0,45 0,45 0,45 0,75 Buffer tank water content (option) dm3 92	Condenser water pressure drop	kPa	4	6	5	6	5	7	7
Pump available head (option) kPa 113 92 135 125 106 82 129 Pump power supply kW 0,33 0,33 0,45 0,45 0,45 0,45 0,75 Buffer tank water content (option) dm3 92	Scroll compressor / refrigerant circuit	Nr.	1/1	1/1	1/1	1/1	1/1	1/1	1/1
Pump power supply kW 0,33 0,33 0,45 0,45 0,45 0,45 0,75 Buffer tank water content (option) dm3 92	Water content on user side	dm3	3,1	3,1	3,6	3,6	3,9	4,3	4,6
Buffer tank water content (option) dm3 92	Pump available head (option)	kPa	113	92	135	125	106	82	129
Hydraulic connections 1" 1/2	Pump power supply	kW	0,33	0,33	0,45	0,45	0,45	0,45	0,75
Height mm 1270 <th< td=""><td>Buffer tank water content (option)</td><td>dm3</td><td>92</td><td>92</td><td>92</td><td>92</td><td>92</td><td>92</td><td>92</td></th<>	Buffer tank water content (option)	dm3	92	92	92	92	92	92	92
Length mm 812 </td <td>Hydraulic connections</td> <td></td> <td>1" 1/2</td>	Hydraulic connections		1" 1/2	1" 1/2	1" 1/2	1" 1/2	1" 1/2	1" 1/2	1" 1/2
Width mm 508 <td>Height</td> <td>mm</td> <td>1270</td> <td>1270</td> <td>1270</td> <td>1270</td> <td>1270</td> <td>1270</td> <td>1270</td>	Height	mm	1270	1270	1270	1270	1270	1270	1270
Weight of standard unit kg 121 125 167 203 210 219 233 MCW-CS sound power level dB(A) 61 61 61 62 62 65 65	Length	mm	812	812	812	812	812	812	812
MCW-CS sound power level dB(A) 61 61 61 62 62 65 65	Width	mm	508	508	508	508	508	508	508
	Weight of standard unit	kg	121	125	167	203	210	219	233
MCW-CL sound power level dB(A) 59 59 60 60 60 63 63	MCW-CS sound power level	dB(A)	61	61	61	62	62	65	65
	MCW-CL sound power level	dB(A)	59	59	60	60	60	63	63

Cooling capacity: evaporator water temperature $12^{\circ}\text{C}/7^{\circ}\text{C}$, condenswer water temperature $15/30^{\circ}\text{C}$. Sound pressure level referred to the following conditions: in free field, 1 m. distance, directional factor 2.



MCW Package water condensed water chillers and heat pumps

HEAT PUMP RATED TECHNICAL DATA											
MCW - HS / HL		005 M	005	007 M	007	010 M	010	012			
Cooling capacity	kW	5,3	5,3	6,8	6,8	9,6	9,6	11,8			
Rated power supply	kW	1,32	1,3	1,74	1,7	2,34	2,3	2,75			
Rated current absorbed	A	6,26	2,62	8,27	3,47	11,21	4,71	5,63			
Evaporator water flow	I/h	911	911	1170	1169	1651	1651	2029			
Evaporator water pressure drop	kPa	25	25	29	29	25	25	29			
Condenser water flow	l/h	376	375	485	482	678	675	826			
Condenser water pressure drop	kPa	4	4	6	6	4	4	6			
Heating capacity	kW	6,02	5,9	7,75	7,6	10,8	10,6	13,1			
Rated power input	kW	1,67	1,64	2,19	2,14	2,96	2,9	3,47			
Rated current absorbed	А	8,51	3,28	11,51	4,44	15,63	5,99	7,05			
Condenser water flow	l/h	1035	1015	1334	1307	1858	1823	2254			
Condeser water pressure drop	kPa	30	29	45	43	32	31	47			
Power supply	V - ph - Hz	230-1-50	400-3-50 + N	230-1-50	400-3-50 + N	230-1-50	400-3-50 + N	400-3-50 + N			
maximum current absorbed	Α	12	4,2	15	5,1	23,1	7	10			
Starting Ampere	Α	47	24	61	32	100	46	50			
Scroll compressor / refrigerant circuit	Nr.	1	1	1	1	1	1	1			
Water content on user side	dm3	2,1	2,1	2,1	2,1	2,6	2,6	2,6			
Pump available head (option)	kPa	91	92	84	85	78	79	148			
Pump power supply	kW	0,25	0,25	0,25	0,25	0,25	0,25	0,33			
Buffer tank water content (option)	dm3	47	47	47	47	47	47	92			
GAS Hydraulic connections		1"	1"	1"	1"	1"	1"	1" 1/2			
Height	mm	830	830	830	830	830	830	1270			
Length	mm	705	705	705	705	705	705	812			
Width	mm	453	453	453	453	453	453	508			
Weight of standard unit	kg	106	106	109	109	112	112	123			
MCW-HS sound power level	dB(A)	55	55	55	55	59	59	61			
MCW-HL sound power level	dB(A)	53	53	53	53	57	57	59			
MCW - HS / HL		015	018	020	022	027	031	039			
Cooling capacity	kW	14,5	17,3	20,1	21,2	26,1	30,3	37,5			
Rated power supply	kW	3,4	3,89	4,4	4,9	6,3	7,2	8,9			
Rated current absorbed	А	7,43	7,37	9,37	10,2	13,15	15,23	17,38			
Evaporator water flow	I/h	2494	2976	3458	3647	4489	5212	6450			
Evaporator water pressure drop	kPa	26	28	26	27	24	27	26			
Condenser water flow	I/h	1016	1204	1392	1483	1840	2130	2635			
Condenser water pressure drop	kPa	4	6	5	6	5	7	7			
Heating capacity	kW	16	19,2	21,6	23,59	29	33,6	41,7			
Rated power input	kW	4,28	4,91	5,5	6,2	7,9	9,1	11,2			
Rated current absorbed	A	8,95	9,88	11,89	12,63	16,34	19,04	22,34			
Condenser water flow	l/h	2751	3303	3715	4058	4989	5779	5343			
Condeser water pressure drop	kPa	13	46	37	46	38	50	18			
Power supply	V - ph - Hz				400-3-50 + N						
maximum current absorbed	Α	66	14	16	17	20	29	32			
Starting Ampere	Α	31	74	101	98	130	130	135			
Scroll compressor / refrigerant circuit	Nr.	1	1	1	1	1	1	1			
Water content on user side	dm3	3,1	3,1	3,6	3,6	3,9	4,3	4,6			
Pump available head (option)	kPa	148	140	122	158	151	139	149			
Pump power supply	kW	0,33	0,33	0,45	0,45	0,45	0,45	0,75			
Buffer tank water content (option)	dm3	92	92	92	92	92	92	92			
GAS Hydraulic connections		1" 1/2	1" 1/2	1" 1/2	1" 1/2	1" 1/2	1" 1/2	1" 1/2			
Height	mm	1270	1270	1270	1270	1270	1270	1270			
Length	mm	812	812	812	812	812	812	812			
Width	mm	508	508	508	508	508	508	508			
Weight of standard unit	kg	125	132	175	209	221	236	247			
MCW-HS sound power level	dB(A)	55	55	55	55	59	59	61			

Cooling capacity: evaporator water temperature 12°C / 7°C , condenser water temperature $15/30^{\circ}\text{C}$. Heating capacity: condenser water temperature $40/45^{\circ}\text{C}$, water temperature to the evaporator 15°C Sound pressure level referred to the following conditions: in free field, 1 m. distance, directional factor 2.



MCR package motoevaporating units

Derived from the **MCW** water-condensed chiller range the **MCR** motor-driven evaporating units are available in standard and low-noise version for cooling function only.

The many options that complete the unit include remote condensers with axial fans, vertical or horizontal air flow, in standard or low-noise version and heat recovery function (desuperheater 40%).

Mechanical water filter Y version, OBLIGATORY, on all the versions to protect the exchangers (either user and source side).



		MCR C TEC	INICAL DATA				
MCR - CS / CL		005 M	005	007 M	007	010 M	010
Cooling capacity	kW	4,8	4,8	6,2	6,2	8,6	8,6
Rated power input	kW	1,63	1,6	2,16	2,1	2,96	2,9
Rated current absorbed	А	7,63	2,96	9,99	3,77	13,84	5,36
Power supply	V - ph - Hz	230-1-50	400-3-50 + N	230-1-50	400-3-50 + N	230-1-50	400-3-50 + N
Maximum current absorbed	A	12	4,2	15	5,1	23,1	7
Starting ampere	А	47	24	61	32	100	46
Evaporator water flow	l/h	825	825	1066	1067	1478	1480
Evaporator water pressure drop	kPa	26	26	30	30	26	26
Scroll compressor / refrigerant circuit	Nr.	1/1	1/1	1/1	1/1	1/1	1/1
Plates evaporator	Nr.	1	1	1	1	1	1
Water content on user side	dm3	2,1	2,1	2,1	2,1	2,6	2,6
Pump available head (option)	kPa	81	81	72	72	67	67
Pump power supply	kW	0,25	0,25	0,25	0,25	0,25	0,25
Buffer tank water content (option)	dm3	47	47	47	47	47	47
Height	mm	830	830	830	830	830	830
Length	mm	705	705	705	705	705	705
Width	mm	453	453	453	453	453	453
MCR-CS sound power level	dB(A)	55	55	55	55	59	59
MCR-CL sound power level	dB(A)	53	53	53	53	57	57
MCR - CS / CL		015	018	020	022	027	031
Cooling capacity	kW	13	15,6	17,6	19,2	23,5	27,3
Rated power input	kW	4,3	5	5,6	6,2	8	9,1
Rated current absorbed	A	8,39	8,85	10,76	11,52	15,04	16,96
Power supply	V - ph - Hz			400-3-50 + N			0
Maximum current absorbed	A	13	14	16	17	20	29
Starting ampere	A	66	74	101	98	130	130
Evaporator water flow	l/h	2236	2683	3028	3302	4042	4695
Evaporator water pressure drop	kPa	26	29	26	29	26	29
Scroll compressor / refrigerant circuit	Nr.	1/1	1/1	1/1	1/1	1/1	1/1
Plates evaporator	Nr.	1	1	1	1	1	1
Water content on user side	dm3	3,1	3,1	3,6	3,6	3,9	4,3
Pump available head (option)	kPa	125	107	145	136	122	101
Pump power supply	kW	0,33	0,33	0,45	0,45	0,45	0,45
Buffer tank water content (option)	dm3	92	92	92	92	92	92
Height	mm	1270	1270	1270	1270	1270	1270
Length	mm	812	812	812	812	812	812
Width	mm	508	508	508	508	508	508
MCR-CS sound power level	dB(A)	61	61	61	62	62	62
men ee count ponts. level	uD(A)	01	01	01	02	02	02



MODELS AND CONFIGURATIONS

The MCR series comprises 11 models.

They are available both in models with a cooling function only.

The numerous constructive options may be selected using the configuration scheme illustrated below.

The choice of some options can prevent the choice of others or render obligatory other fields. To contact the Galletti for verification

Code

It consists of 8 carachters, which show the range, the model, the operation mode and the power supply Name of the series

MCR	motoevaporating units
	Model
005	provides general indications as to the cooling capacity of standard models
007	
010	
012	
015	
018	
020	
022	
027	
031	
039	
	Operation
C	Water chiller
	Version
S	standard
L	low noise

OPTION AND UNIT CONFIGURATION

15 fields which customise the unit complying with customer's requirements

Field	Name.	Description
1	Refriger	ant / Power supply
	0	R407C - 230/1/50
	1	R407C - 400/3/50 + N
	2	R407C- 400/3/50 with 230V built-in transformer for functions
		requiring 230V power supply
2		ocessor / expansion valve
	0	basic (μChiller) + traditional valve
2	Α	basic (μChiller) + electronic valve
ა		sation control
4	0	not present
4		nd water tank
	0 1	not present
	2	only pump
5		pump + tank communication
J	0	not present
	2	RS485
6		accessories
J	0.0011119	not present
	М	Pressure gauges
7		ssor options
•	0	not present
8		condenser option
	0	not present
9	Remote	control board
	0	not present
	S	simplified *
	M	μChiller microprocessor
10	Packag	e
	0	standard
	1	Wooden crate
	2	Wooden case
11	Damper	S
	0	not present
	G	base vibration dampers (rubber type)
12	Accesso	
	0	not present
13		ler / remote condenser
	0	not present
	A	Dry Cooler
	В	Dry Cooler with condensing control
	C	Remote condenser
14	Dry ooo	Remote condenser with condensing control
14		ler / remote condenser not present
	0 1	standard version: horizontal air flow
	2	standard version: nonzontal air flow
	3	low-noise version: horizontal air flow
	4	low-noise version: nonzonial air now
15	Execution	
	0	standard
	S	special
	_	-p

^{*} In a Gewiss box with ON indicator light, low-priority alarm (e.g. pump breakdown), serious alarm (e.g. unit stopped) and ON-OFF switch. All powered at 24 Vac through an insulating transformer



LCW Package water cooled chillers and heat pumps

LCW water chillers and heat pumps are designed for indoor installation in both residential and industrial applications with 24 h/day operation.

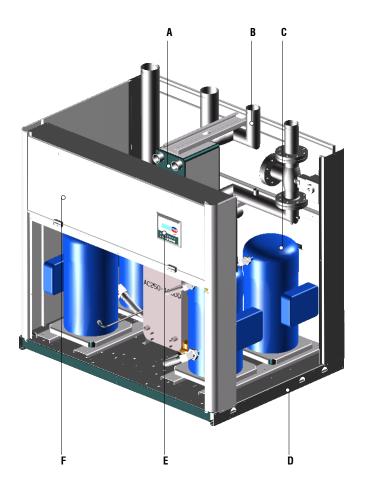
They are developed in a completely careened execution for an absolute noisless of the assembly.

The range is made of 15 models cooling onnly and heat pumps, realized in standrad and low noise version, with heating capacity from 56 to 334 kW and cooling capacity from 50 to 296 kW:

LCW CS water chillers, standard version
 LCW CL water chillers, low noise version
 LCW HS heat pumps, standard version
 LCW HL heat pumps, low noise version

The innovative design philosophy drawn to the creation of a unit with very reduced height (1,5 m for all the range) and water connection to the top of the unit, where together with an already preassembled internal piping means a reduction of installation costs and of technical space. All the sites are provided with refrigerant circuit and, starting from site 180, the units are provided with 4 compressors in tandem configuration with a very flexibility in the capacity modulation, reduced in rush currents and higher at the part loaded operation.

Mechanical water filter Y version, OBLIGATORY, on all the versions to protect the exchangers (either user and source side).





- A Only heat exchangers with stainless steel braze-welded plates are used. Starting from model 105, all units have "cross flow" type dual circuit exchangers on the refrigerant side and a single circuit exchanger on the water side.
- B All the units have a single plumbing connection to the outside, whether they are equipped with a dual heat exchanger (up to model LCW090) or a single dual circuit heat exchanger on the refrigerant side. A water flow control device is included as a standard feature.

In addition to said device, the units are fitted with an outlet water temperature sensor performing the function of an antifreeze thermostat.

- Only scroll-type compressors are used in the LCW units, both in single and tandem configurations.
- D Painted galvanised sheet steel supporting base and enclosing panels made of Peraluman to ensure effective protection against corrosive agents.
- E Microprocessor control; the Basic version featured on standard models is a mChiller controller. On request, the units can be equipped with Advanced microprocessor control (pCO controller), which in addition to the functions described, offers the possibility of customized software features and of managing the 4 reduction steps for units starting from model 180.
- F Electric control board constructed and wired in accordance with EEC Directive 73/23, Directive 89/336 on electromagnetic compatibility and related standards. It is equipped with an air circulation system that is active when the unit is running.

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.



RG66004964 - Rev.00

MODELS AND CONFIGURATIONS

The LCW series comprises 15 models with heating capacities ranging from 56 to 334 kW. They are available both in models with a cooling function only and in models with heat pump operation. The numerous constructive options may be selected using the configuration scheme illustrated below.

The choice of some options can prevent the choice of others or render obligatory other fields. To contact the Galletti for verification

Code

It consists of 8 carachters, which show the range, the model, the operation mode and the power supply

	Brand name of series
LCW	Water condensing chilling units and reversible water/water heat pumps
	Model
055	provides general indications as to the cooling capacity of standard models
060	
070	
080	
090	
105	
115	
130	
150	
180	
205	
235	
250	
275	
300	
	Operation
C	Water Chiller
Н	Heat pump
	Version
S	standard
L	Low Noise

OPTION AND UNIT CONFIGURATION

15 fields which customise the unit complying with customer's requirements

ield	Name.	Description
	Refriger	ant / Power supply
	2	R407C - 400/3/50 with 230V built in transformer
	Micropro	ocessor / expansion valve
	0	basic (μChiller2) + traditional valve
	A	basic (μChiller2) + electronic valve
	В	advanced (pCO) + traditional valve
	C	advanced (pCO) + electronic valve
		sation control
	0	Not present
	C	Pressure switch modulating with adjustment of water flow rate
		(mounted on the unit)
	Heat re	
	0	Not present
		comunication
	0	Not present
	1	RS232
	2	RS485
		accessories
	0	Not present
	M	Pressure gauges
		ssor options
	0	Not present
	1	power factor correction capacitors
	2	Soft-starter
	3	power factor correction capacitors + Soft-starter
		condenser option
	P	Condenser for well/city water (mod. 045115)
	R	Condenser for well/city water (mod. 130300)
	T	Oversized condenser for dry cooler application
		control board
	0	Not present
	S	simplified *
	M	μChiller2 microprocessor
	P	pCO microprocessor
)	Packago	
	0	standard Waadan arata
	1 2	Wooden boy
		Wooden box
	Damper 0	
	G	Not present
2	Accesso	base vibration dampers (rubber type)
•	0	Not present
	1	
	2	Pair of VIC-TAULIC couplings (for in-out water connection) Paddle flow switch (standard differential pressure switch)
	3	Paddle flow switch + Pair of VIC-TAULIC couplings
3		ler / remote condenser
,	0	Not present
	A	dry cooler
	A B	dry cooler with condensing control
	C C	remote condenser
	D D	
		remote condenser with condensing control
	Dry Coo	ler / remote condenser not present
	1	standard version: horizontal air flow
	2	standard version: nonzontal air now standard version: vertical air flow
	3	low-noise version: horizontal air flow
	3 4	
		low-noise version: vertical air flow
5	Execution 0	on standard
	_	
	1	special

^{*} In a Gewiss box with ON indicator light, low-priority alarm (e.g. pump breakdown), serious alarm (e.g. unit stopped) and ON-OFF switch. All powered at 24 Vac through an insulating transformer



	WATI	R CHILLE	RS RATED	TECHNICA	L DATA				
LCW - CS / CL		55	60	70	80	90	105	115	130
				Operation	with municipa	lity-well wate	r (15-30°C)		
Cooling capacity	kW	50	58,1	67,2	76,13	89,6	102,6	115,7	132,6
Rated power input	kW	11,9	13,8	16	18,2	21,2	25,1	29	32,2
Rated current absorbed	А	24,99	29,18	32,36	35,54	41,71	47,49	53,49	59,72
Evaporator water flow	l/h	8600	9993	11559	13094	15412	17648	19900	2280
Evaporator water pressure drop	kPa	27	34	48	48	52	31	30	31
Condenser water flow	l/h	3515	4083	4725	5356	6292	7250	8213	9356
Condenser water pressure drop	kPa	8	8	8	8	9	4	5	4
Power supply	V - ph - Hz 400-3-50								
Maximum current absorbed	Α	50,5	62,5	70,2	76,2	76,2	93	108	123,
Starting ampere	Α	146	152	198	203	206	247	252	307
Scroll compressor / refrigerant circuit	Nr.	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2
Plates evaporator	Nr.	2	2	2	2	2	1	1	1
Plates condenser	Nr.	2	2	2	2	2	1	1	1
Water content on user side	dm3	5,5	6,1	6,6	7,1	7,9	8,2	8,8	9,5
GAS Hydraulic connections		2"	2"	2"	2"	2"	2"	2"	3"
Height	mm	1492	1492	1492	1492	1492	1492	1492	1492
Length	mm	1204	1204	1204	1204	1204	1204	1204	1654
Width	mm	788	788	788	788	788	788	788	1168
Weight	kg	395	417	434	445	462	582	610	710
LCW-CS sound power level	dB(A)	71	71	72	72	72	73	73	75
LCW-CL sound power level	dB(A)	69	69	70	70	70	71	71	73
LCW - CS / CL		150	180	205	235	250	275	300	
			Оре	ration with m	unicipality-we	ll water (15-3	0°C)		
Cooling capacity	kW	148,1	172,2	203,2	234,2	247	259,9	296,2	•
Rated power input	kW	35,2	42	50,1	58,18	61,3	64,4	70,4	•
Rated current absorbed	А	65,62	83,15	95,15	107,32	113,51	119,43	131,57	•
Evaporator water flow	l/h	25474	29618	34950	40282	42483	44703	50947	•
Evaporator water pressure drop	kPa	36	34	34	34	38	31	38	
Condenser water flow	l/h	10408	12160	14379	16596	17500	18409	20817	

LCW - CS / CL		150	180	205	235	250	275	300
	Operation with municipality-well water (15-30°C)							
Cooling capacity	kW	148,1	172,2	203,2	234,2	247	259,9	296,2
Rated power input	kW	35,2	42	50,1	58,18	61,3	64,4	70,4
Rated current absorbed	А	65,62	83,15	95,15	107,32	113,51	119,43	131,57
Evaporator water flow	l/h	25474	29618	34950	40282	42483	44703	50947
Evaporator water pressure drop	kPa	36	34	34	34	38	31	38
Condenser water flow	l/h	10408	12160	14379	16596	17500	18409	20817
Condenser water pressure drop	kPa	5	5	5	10	10	9	13
Power supply	V/Ph/Hz				400-3-50			
Maximum current absorbed	А	141,2	144,2	165,6	205,6	228	246	260
Starting ampere	А	325,3	248	301	318	377	384	384
Scroll compressor / refrigerant circuit	Nr.	2/2	2/4	2/4	2/4	2/4	2/4	2/4
Plates evaporator		1	1	1	1	1	1	1
Plates condenser	Nr.	1	1	1	1	1	1	1
Water content on user side	dm3	10,5	10,5	11,5	12,4	12,4	13,6	14,4
GAS Hydraulic connections		3"	3"	4"	4"	4"	4"	4"
Height	mm	1492	1492	1492	1492	1492	1712	1712
Length	mm	1654	1654	1654	1654	1654	1654	1654
Width	mm	1168	1168	1168	1168	1168	1168	1168
Weight	kg	783	956	1042	1075	1097	1134	1160
LCW-CS sound power level	dB(A)	75	75	75	75	75	75	75
LCW-CL sound power level	dB(A)	73	73	73	73	73	73	73

Cooling capacity: evaporatore water temperatures: $12/7^{\circ}$ C Sound power level measured in conformity with standard: ISO 3741 - ISO 3744 e EN 29614-1



Cooling capacity Rated power input Rated current absorbed Evaporator water flow Evaporator water pressure drop Heating capacity Rated power input Rated current absorbed Condenser water flow Condenser water flow Condenser water pressure drop Power supply Scroll compressor / refrigerant circuit Water content on user side GAS Hydraulic connections Height Length Width Unit weight LCW-HS sound power level LCW-HL sound power level LCW-HL sound power level LCW-HS / HL Cooling capacity Rated power input Rated current absorbed Evaporator water flow Evaporator water flow Evaporator water pressure drop	kW kW A I/h kPa kW A I/h kPa V-ph-Hz Nr. dm3 mm mm kg dB(A) dB(A)	47,3 11,9 24,99 8136 46 56,4 15,7 30,27 9701 20 2/2 5,5 2" 1492 1204 788 412 71 69	55,2 13,8 29,18 9495 54	64 16 32,36 11009 37	72,7 18,7 35,54 12505 47	83,2 21,1 41,39 14310 45 iity-well w 99,3 27,6 54,04 17080 19 3-50 2/2 7,9 2" 1492 1204 788 481 72	105 ater (15-3) 98,1 25 47,19 16837 24 ater (15-1) 117,4 32,4 61,03 20193 27 2/2 8,2 2" 1492 1204 788 613 73	113 29 53,11 19437 32	32,1 55,1 21603 19 151,2 41,5 76,48 26006 32 2/2 9,5 3" 1492 1654 1168 710
Rated current absorbed Evaporator water flow Evaporator water pressure drop Heating capacity Rated power input Rated current absorbed Condenser water flow Condenser water pressure drop Power supply Scroll compressor / refrigerant circuit Water content on user side GAS Hydraulic connections Height Length Width Unit weight LCW-HS sound power level LCW-HL sound power level LCW-HL sound power level LCW-HS / HL Cooling capacity Rated power input Rated current absorbed Evaporator water flow	kW A I/h kPa kW A I/h kPa V - ph - Hz Nr. dm3 mm mm kg dB(A)	11,9 24,99 8136 46 56,4 15,7 30,27 9701 20 2/2 5,5 2" 1492 1204 788 412 71 69	55,2 13,8 29,18 9495 54 Oper 65,8 18,3 37,46 11318 28 2/2 6,1 2" 1492 1204 788 434 71	64 16 32,36 11009 37 ration with 76,5 21,1 40,67 13158 37 2/2 6,6 2" 1492 1204 788 452 72	72,7 18,7 35,54 12505 47 municipal 87,2 24 46,3 14999 48 400-2/2 7,1 2" 1492 1204 788 463 72	83,2 21,1 41,39 14310 45 iity-well w 99,3 27,6 54,04 17080 19 3-50 2/2 7,9 2" 1492 1204 788 481 72	98,1 25 47,19 16837 24 ater (15-1) 117,4 32,4 61,03 20193 27 2/2 8,2 2" 1492 1204 788 613 73	113 29 53,11 19437 32 0°C) 135,4 37,3 70,08 23290 35 2/2 8,8 2" 1492 1204 788 635	55,1 21603 19 151,2 41,5 76,49 26006 32 2/2 9,5 3" 1492 1654 1168 710
Rated current absorbed Evaporator water flow Evaporator water pressure drop Heating capacity Rated power input Rated current absorbed Condenser water flow Condenser water flow Condenser water pressure drop Power supply Scroll compressor / refrigerant circuit Water content on user side GAS Hydraulic connections Height Length Width Unit weight LCW-HS sound power level LCW-HL sound power level LCW-HL sound power level LCW - HS / HL Cooling capacity Rated power input Rated current absorbed Evaporator water flow	kW A I/h kPa kW A I/h kPa V - ph - Hz Nr. dm3 mm mm kg dB(A)	11,9 24,99 8136 46 56,4 15,7 30,27 9701 20 2/2 5,5 2" 1492 1204 788 412 71 69	13,8 29,18 9495 54 Opel 65,8 18,3 37,46 11318 28 2/2 6,1 2" 1492 1204 788 434 71	16 32,36 11009 37 ration with 76,5 21,1 40,67 13158 37 2/2 6,6 2" 1492 1204 788 452 72	18,7 35,54 12505 47 municipal 87,2 24 46,3 14999 48 400- 2/2 7,1 2" 1492 1204 788 463 72	21,1 41,39 14310 45 ity-well w 99,3 27,6 54,04 17080 19 3-50 2/2 7,9 2" 1492 1204 788 481 72	25 47,19 16837 24 ater (15-1) 117,4 32,4 61,03 20193 27 2/2 8,2 2" 1492 1204 788 613 73	29 53,11 19437 32 0°C) 135,4 37,3 70,08 23290 35 2/2 8,8 2" 1492 1204 788 635	32,1 55,1 21603 19 151,2 41,5 76,48 26006 32 2/2 9,5 3" 1492 1654 1168 710
Rated current absorbed Evaporator water flow Evaporator water pressure drop Heating capacity Rated power input Rated current absorbed Condenser water flow Condenser water pressure drop Power supply Scroll compressor / refrigerant circuit Water content on user side GAS Hydraulic connections Height Length Width Unit weight LCW-HS sound power level LCW-HL sound power level LCW-HL sound power level LCW - HS / HL Cooling capacity Rated power input Rated current absorbed Evaporator water flow	A I/h kPa KW kW A I/h kPa V - ph - Hz Nr. dm3 mm mm kg dB(A)	24,99 8136 46 56,4 15,7 30,27 9701 20 2/2 5,5 2" 1492 1204 788 412 71 69	29,18 9495 54 Open 65,8 18,3 37,46 11318 28 2/2 6,1 2" 1492 1204 788 434 71	32,36 11009 37 ration with 76,5 21,1 40,67 13158 37 2/2 6,6 2" 1492 1204 788 452	35,54 12505 47 municipal 87,2 24 46,3 14999 48 400- 2/2 7,1 2" 1492 1204 788 463 72	41,39 14310 45 iity-well w 99,3 27,6 54,04 17080 19 3-50 2/2 7,9 2" 1492 1204 788 481 72	47,19 16837 24 ater (15-1) 117,4 32,4 61,03 20193 27 2/2 8,2 2" 1492 1204 788 613 73	53,11 19437 32 0°C) 135,4 37,3 70,08 23290 35 2/2 8,8 2" 1492 1204 788 635	55,1 21603 19 151,2 41,5 76,48 26000 32 2/2 9,5 3" 1492 1654 1168 710
Evaporator water flow Evaporator water pressure drop Heating capacity Rated power input Rated current absorbed Condenser water flow Condenser water pressure drop Power supply Scroll compressor / refrigerant circuit Water content on user side GAS Hydraulic connections Height Length Width Unit weight LCW-HS sound power level LCW-HL sound power level LCW-HL sound power level LCW-HS flace input Rated power input Rated current absorbed Evaporator water flow	I/h kPa KW KW A I/h kPa V-ph-Hz Nr. dm3 mm mm kg dB(A)	8136 46 56,4 15,7 30,27 9701 20 2/2 5,5 2" 1492 1204 788 412 71 69	9495 54 Oper 65,8 18,3 37,46 11318 28 2/2 6,1 2" 1492 1204 788 434 71	11009 37 ration with 76,5 21,1 40,67 13158 37 2/2 6,6 2" 1492 1204 788 452 72	12505 47 municipal 87,2 24 46,3 14999 48 400- 2/2 7,1 2" 1492 1204 788 463 72	14310 45 iity-well w 99,3 27,6 54,04 17080 19 3-50 2/2 7,9 2" 1492 1204 788 481 72	16837 24 ater (15-1) 117,4 32,4 61,03 20193 27 2/2 8,2 2" 1492 1204 788 613 73	19437 32 0°C) 135,4 37,3 70,08 23290 35 2/2 8,8 2" 1492 1204 788 635	21603 19 151,2 41,5 76,49 26006 32 2/2 9,5 3" 1492 1654 1168 710
Evaporator water pressure drop Heating capacity Rated power input Rated current absorbed Condenser water flow Condenser water pressure drop Power supply Scroll compressor / refrigerant circuit Water content on user side GAS Hydraulic connections Height Length Width Unit weight LCW-HS sound power level LCW-HL sound power level LCW-HL sound power level LCW-HS / HL Cooling capacity Rated power input Rated current absorbed Evaporator water flow	kPa kW kW A I/h kPa V - ph - Hz Nr. dm3 mm mm kg dB(A)	46 56,4 15,7 30,27 9701 20 2/2 5,5 2" 1492 1204 788 412 71 69	54 Open 65,8 18,3 37,46 11318 28 2/2 6,1 2" 1492 1204 788 434 71	37 ration with 76,5 21,1 40,67 13158 37 2/2 6,6 2" 1492 1204 788 452 72	47 municipal 87,2 24 46,3 14999 48 400-2/2 7,1 2" 1492 1204 788 463 72	45 iity-well w 99,3 27,6 54,04 17080 19 3-50 2/2 7,9 2" 1492 1204 788 481 72	24 ater (15-1) 117,4 32,4 61,03 20193 27 2/2 8,2 2" 1492 1204 788 613 73	32 0°C) 135,4 37,3 70,08 23290 35 2/2 8,8 2" 1492 1204 788 635	19 151,2 41,5 76,49 26006 32 2/2 9,5 3" 1492 1654 1168 710
Heating capacity Rated power input Rated current absorbed Condenser water flow Condenser water pressure drop Power supply Scroll compressor / refrigerant circuit Water content on user side GAS Hydraulic connections Height Length Width Unit weight LCW-HS sound power level LCW-HL sound power level LCW-HL sound power level LCW-HS / HL Cooling capacity Rated power input Rated current absorbed Evaporator water flow	kW kW A I/h kPa V-ph-Hz Nr. dm3 mm mm kg dB(A)	56,4 15,7 30,27 9701 20 2/2 5,5 2" 1492 1204 788 412 71 69	0pei 65,8 18,3 37,46 11318 28 2/2 6,1 2" 1492 1204 788 434 71	ration with 76,5 21,1 40,67 13158 37 2/2 6,6 2" 1492 1204 788 452 72	municipal 87,2 24 46,3 14999 48 400- 2/2 7,1 2" 1492 1204 788 463 72	99,3 27,6 54,04 17080 19 3-50 2/2 7,9 2" 1492 1204 788 481 72	ater (15-1) 117,4 32,4 61,03 20193 27 2/2 8,2 2" 1492 1204 788 613 73	0°C) 135,4 37,3 70,08 23290 35 2/2 8,8 2" 1492 1204 788 635	151,2 41,5 76,49 26000 32 2/2 9,5 3" 1492 1654 1168 710
Rated power input Rated current absorbed Condenser water flow Condenser water pressure drop Power supply Scroll compressor / refrigerant circuit Water content on user side GAS Hydraulic connections Height Length Width Unit weight LCW-HS sound power level LCW-HL sound power level LCW-HL sound power level LCW - HS / HL Cooling capacity Rated power input Rated current absorbed Evaporator water flow	kW A I/h kPa V - ph - Hz Nr. dm3 mm mm kg dB(A)	15,7 30,27 9701 20 2/2 5,5 2" 1492 1204 788 412 71 69	65,8 18,3 37,46 11318 28 2/2 6,1 2" 1492 1204 788 434 71	76,5 21,1 40,67 13158 37 2/2 6,6 2" 1492 1204 788 452 72	87,2 24 46,3 14999 48 400- 2/2 7,1 2" 1492 1204 788 463 72	99,3 27,6 54,04 17080 19 3-50 2/2 7,9 2" 1492 1204 788 481 72	117,4 32,4 61,03 20193 27 2/2 8,2 2" 1492 1204 788 613 73	135,4 37,3 70,08 23290 35 2/2 8,8 2" 1492 1204 788 635	41,5 76,49 26006 32 2/2 9,5 3" 1492 1654 1168 710
Rated power input Rated current absorbed Condenser water flow Condenser water pressure drop Power supply Scroll compressor / refrigerant circuit Water content on user side GAS Hydraulic connections Height Length Width Unit weight LCW-HS sound power level LCW-HL sound power level LCW-HL sound power level LCW - HS / HL Cooling capacity Rated power input Rated current absorbed Evaporator water flow	kW A I/h kPa V - ph - Hz Nr. dm3 mm mm kg dB(A)	15,7 30,27 9701 20 2/2 5,5 2" 1492 1204 788 412 71 69	18,3 37,46 11318 28 2/2 6,1 2" 1492 1204 788 434 71	21,1 40,67 13158 37 2/2 6,6 2" 1492 1204 788 452 72	24 46,3 14999 48 400- 2/2 7,1 2" 1492 1204 788 463 72	27,6 54,04 17080 19 3-50 2/2 7,9 2" 1492 1204 788 481 72	32,4 61,03 20193 27 2/2 8,2 2" 1492 1204 788 613 73	37,3 70,08 23290 35 2/2 8,8 2" 1492 1204 788 635	41,5 76,49 26006 32 2/2 9,5 3" 1492 1654 1168 710
Rated current absorbed Condenser water flow Condenser water pressure drop Power supply Scroll compressor / refrigerant circuit Water content on user side GAS Hydraulic connections Height Length Width Unit weight LCW-HS sound power level LCW-HL sound power level LCW-HL sound power level LCW - HS / HL Cooling capacity Rated power input Rated current absorbed Evaporator water flow	A I/h kPa V - ph - Hz Nr. dm3 mm mm kg dB(A)	30,27 9701 20 2/2 5,5 2" 1492 1204 788 412 71 69	37,46 11318 28 2/2 6,1 2" 1492 1204 788 434 71	40,67 13158 37 2/2 6,6 2" 1492 1204 788 452 72	46,3 14999 48 400 2/2 7,1 2" 1492 1204 788 463 72	54,04 17080 19 3-50 2/2 7,9 2" 1492 1204 788 481 72	61,03 20193 27 2/2 8,2 2" 1492 1204 788 613 73	70,08 23290 35 2/2 8,8 2" 1492 1204 788 635	76,49 26006 32 2/2 9,5 3" 1492 1654 1168 710
Condenser water flow Condenser water pressure drop Power supply Scroll compressor / refrigerant circuit Water content on user side GAS Hydraulic connections Height Length Width Unit weight LCW-HS sound power level LCW-HL sound power level LCW-HL sound power level LCW-HS / HL Cooling capacity Rated power input Rated current absorbed Evaporator water flow	I/h kPa V - ph - Hz Nr. dm3 mm mm kg dB(A)	9701 20 2/2 5,5 2" 1492 1204 788 412 71 69	2/2 6,1 2" 1492 1204 788 434 71	13158 37 2/2 6,6 2" 1492 1204 788 452 72	14999 48 400 2/2 7,1 2" 1492 1204 788 463 72	17080 19 3-50 2/2 7,9 2" 1492 1204 788 481 72	20193 27 2/2 8,2 2" 1492 1204 788 613 73	23290 35 2/2 8,8 2" 1492 1204 788 635	26006 32 2/2 9,5 3" 1492 1654 1168 710
Condenser water pressure drop Power supply Scroll compressor / refrigerant circuit Water content on user side GAS Hydraulic connections Height Length Width Unit weight LCW-HS sound power level LCW-HL sound power level LCW-HL sound power level LCW - HS / HL Cooling capacity Rated power input Rated current absorbed Evaporator water flow	kPa V - ph - Hz Nr. dm3 mm mm kg dB(A)	20 2/2 5,5 2" 1492 1204 788 412 71	2/2 6,1 2" 1492 1204 788 434 71	2/2 6,6 2" 1492 1204 788 452 72	48 400-1 2/2 7,1 2" 1492 1204 788 463 72	19 3-50 2/2 7,9 2" 1492 1204 788 481 72	2/2 8,2 2" 1492 1204 788 613 73	35 2/2 8,8 2" 1492 1204 788 635	2/2 9,5 3" 1492 1654 1168 710
Power supply Scroll compressor / refrigerant circuit Water content on user side GAS Hydraulic connections Height Length Width Unit weight LCW-HS sound power level LCW-HL sound power level LCW-HL sound power level COoling capacity Rated power input Rated current absorbed Evaporator water flow	V - ph - Hz Nr. dm3 mm mm mm kg	2/2 5,5 2" 1492 1204 788 412 71	2/2 6,1 2" 1492 1204 788 434 71	2/2 6,6 2" 1492 1204 788 452 72	400 2/2 7,1 2" 1492 1204 788 463 72	3-50 2/2 7,9 2" 1492 1204 788 481 72	2/2 8,2 2" 1492 1204 788 613 73	2/2 8,8 2" 1492 1204 788 635	2/2 9,5 3" 1492 1654 1168 710
Scroll compressor / refrigerant circuit Water content on user side GAS Hydraulic connections Height Length Width Unit weight LCW-HS sound power level LCW-HL sound power level LCW-HL sound power level LCW-HS / HL Cooling capacity Rated power input Rated current absorbed Evaporator water flow	Mr. dm3 mm mm mm kg dB(A)	5,5 2" 1492 1204 788 412 71	6,1 2" 1492 1204 788 434 71	6,6 2" 1492 1204 788 452 72	2/2 7,1 2" 1492 1204 788 463 72	2/2 7,9 2" 1492 1204 788 481 72	8,2 2" 1492 1204 788 613 73	8,8 2" 1492 1204 788 635	9,5 3" 1492 1654 1168 710
Water content on user side GAS Hydraulic connections Height Length Width Unit weight LCW-HS sound power level LCW-HL sound power level LCW-HL sound power level LCW - HS / HL Cooling capacity Rated power input Rated current absorbed Evaporator water flow	mm mm mm kg dB(A)	5,5 2" 1492 1204 788 412 71	6,1 2" 1492 1204 788 434 71	6,6 2" 1492 1204 788 452 72	7,1 2" 1492 1204 788 463 72	7,9 2" 1492 1204 788 481 72	8,2 2" 1492 1204 788 613 73	8,8 2" 1492 1204 788 635	9,5 3" 1492 1654 1168 710
GAS Hydraulic connections Height Length Width Unit weight LCW-HS sound power level LCW-HL sound power level LCW - HS / HL Cooling capacity Rated power input Rated current absorbed Evaporator water flow	mm mm mm kg dB(A)	2" 1492 1204 788 412 71 69	2" 1492 1204 788 434 71	2" 1492 1204 788 452 72	2" 1492 1204 788 463 72	2" 1492 1204 788 481 72	2" 1492 1204 788 613 73	2" 1492 1204 788 635	3" 1492 1654 1168 710
Height Length Width Unit weight LCW-HS sound power level LCW-HL sound power level LCW - HS / HL Cooling capacity Rated power input Rated current absorbed Evaporator water flow	mm mm kg dB(A)	1492 1204 788 412 71 69	1492 1204 788 434 71	1492 1204 788 452 72	1492 1204 788 463 72	1492 1204 788 481 72	1492 1204 788 613 73	1492 1204 788 635	1492 1654 1168 710
Length Width Unit weight LCW-HS sound power level LCW-HL sound power level LCW - HS / HL Cooling capacity Rated power input Rated current absorbed Evaporator water flow	mm mm kg dB(A)	788 412 71 69	1204 788 434 71	1204 788 452 72	1204 788 463 72	1204 788 481 72	1204 788 613 73	1204 788 635	1654 1168 710
Width Unit weight LCW-HS sound power level LCW-HL sound power level LCW - HS / HL Cooling capacity Rated power input Rated current absorbed Evaporator water flow	mm kg dB(A)	788 412 71 69	788 434 71	788 452 72	788 463 72	788 481 72	788 613 73	788 635	1168 710
Unit weight LCW-HS sound power level LCW-HL sound power level LCW - HS / HL Cooling capacity Rated power input Rated current absorbed Evaporator water flow	kg dB(A)	412 71 69	434 71	452 72	463 72	481 72	613 73	635	710
LCW-HS sound power level LCW-HL sound power level LCW - HS / HL Cooling capacity Rated power input Rated current absorbed Evaporator water flow	dB(A)	71 69	71	72	72	72	73		
LCW-HL sound power level LCW - HS / HL Cooling capacity Rated power input Rated current absorbed Evaporator water flow		69						73	
Cooling capacity Rated power input Rated current absorbed Evaporator water flow	dB(A)		69	70			- 4		75
Cooling capacity Rated power input Rated current absorbed Evaporator water flow						70	71	71	73
Rated power input Rated current absorbed Evaporator water flow		150	180	205	235	250	275	300	Ĺ
Rated power input Rated current absorbed Evaporator water flow	LAM			1 with mun				076.0	-
Rated current absorbed Evaporator water flow	kW	138,2	166,5	196,3	222,7	235 61	247,4	276,3	-
Evaporator water flow	kW	35,2	42,5	50,1	57,9		64,2	70,3	-
	A	65,62	82,65	93,98	106,4	112,16	119,05	131,37	-
Evaporator water pressure drop	l/h	23770	28638	33764	38304	40420	42553	47524	-
	kPa	39	39	45	49	32	36	45	-
Heating cancelly	kW	166,9	198,7	1 with mun 234,8			299	333,7	-
Heating capacity	kW	45,6	55,2	64,9	267,8	283,4 78,8	82,9		-
Rated power input Rated current absorbed		88,73	108,86		74,6 138,55	146,25	154,02	91,3 171,6	-
Condenser water flow	A I/h	28707	34176	122,55 40386	46062	48744	51428	57396	-
	kPa	16	42	34	40002	40744	36	45	-
Condenser water pressure drop Power supply	V/Ph/Hz	10	42	34	400-3-50	49		40	-
Scroll compressor / refrigerant circuit	Nr.	2/2	4/4	4/4	4/4	4/4	4/4	4/4	-
Water content on user side	dm3	10,5	10,5	11,5	12,4	12,4	13,6	14,4	-
GAS Hydraulic connections	ullio	3"	3"	4"	4"	4"	4"	4"	-
Height	mm	1492	1492	1712	1712	1712	1712	1712	-
Length	mm	1654	1654	1654	1654	1654	1654	1654	-
Width	mm	1168	1168	1168	1168	1168	1168	1168	-
Unit weight	mm ka	783	956	1042	1075	1097	1134	1160	-
LCW-HS sound power level	kg dB(A)	75	75	75	75	75	75	75	-
LCW-HL sound power level		10	13	10	13	13	73	73	_

Cooling capacity: evaporatore water temperatures: 12/7°C

Heating capacity: condenser water termperature: 40 /45°C; evaporatore inlet water temperature: 15 °C

Sound power level measured in conformity with standard: ISO 3741 - ISO 3744 e EN 29614-1



LCR standard and low noise package motoevaporating units

Derived from the **LCR** water-condensed chiller range the **LCR** motor-driven evaporating units are available in standard and low-noise version for cooling function only.

The many options that complete the unit include remote condensers with axial fans, vertical or horizontal air flow, in standard or low-noise version and heat recovery function (desuperheater 40%).

Mechanical water filter Y version, OBLIGATORY, on all the versions to protect the exchangers (either user and source side)



		CONDENS	ERLESS UNI	T RATED TE	CHNICAL DA	TA			
LCR - CS/CL		055	060	070	080	090	105	115	130
Cooling capacity	kW	43,49	51,07	58,63	66,97	76,39	90,82	105,47	117,58
Power supply	V - ph - Hz				400-	-3-50			
Rated power input	kW	14,74	16,73	20,18	22,51	25,89	30,95	34,83	38,95
Rated current absorbed	Α	27,31	31,38	36,19	39,56	46,48	53,7	59,39	66,47
Maximum current absorbed	Α	50,5	62,5	70,2	76,2	76,2	93	108	123,2
Starting ampere	Α	146	152	198	203	206	247	252	307
Evaporator water flow	l/h	7480	8784	10084	11519	13139	15622	18141	20223
Evaporator water pressure drop	kPa	20	26	37	37	38	24	25	24
Scroll compressor / refrigerant circuit	Nr.	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2
Plates evaporator	Nr.	2	2	2	2	2	1	1	1
Dimensions: height	mm	1534	1534	1534	1534	1534	1534	1534	1594
Dimensions: length	mm	1204	1204	1204	1204	1204	1204	1204	1654
Dimensions: depth	mm	788	788	788	788	788	788	788	1168
LCR-CS sound power level	dB(A)	71	71	72	72	72	73	73	75
LCR-CS sound pressure level	dB(A)	63	63	64	64	64	65	65	67
LCR-CL sound power level	dB(A)	69	69	70	70	70	71	71	73
LCR-CL sound pressure level	dB(A)	61	61	62	62	62	63	63	65
LCR - CS/CL		150	180	205	235	250	275	300	
Cooling capacity	kW	129,11	151,2	181,37	205,3	220,16	235,46	257,26	
Power supply	V - ph - Hz			•	400-3-50	•			
Rated power input	kW	42,62	51,82	61,43	72,69	73,94	77,14	85,24	
Rated current absorbed	Α	72,98	92,9	106,8	122,76	126,08	132,01	145,98	
Maximum current absorbed	Α	141,2	144,2	165,6	205,6	228	246	260	
Starting ampere	Α	325,3	248	301	318	377	384	384	
Evaporator water flow	l/h	22208	26006	31195	35312	37867	40499	44248	
Evaporator water pressure drop	kPa	27	26	27	26	31	26	28	
Scroll compressor / refrigerant circuit	Nr.	2/2	2/4	2/4	2/4	2/4	2/4	2/4	
Plates evaporator	Nr.	1	1	1	1	1	1	1	
Dimensions: height	mm	1594	1594	1594	1594	1594	1594	1594	
Dimensions: length	mm	1654	1654	1654	1654	1654	1654	1654	
Dimensions: depth	mm	1168	1168	1168	1168	1168	1168	1168	
LCR-CS sound power level	dB(A)	75	75	75	75	75	75	75	
LCR-CS sound pressure level	dB(A)	67	67	67	67	67	67	67	
LCR-CL sound power level	dB(A)	73	73	73	73	73	73	73	
LCR-CL sound pressure level	dB(A)	65	65	65	65	65	65	65	

⁻Sound power level measured in conformity with standard: ISO 3741 - ISO 3744 e EN 29614-1



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⁻cooling capacity in combination with remote condense ras reported in thetechnical manual: evaporator water temperatures: 12/7°C; ambient tempature 35°C

⁻Sound opressure level referring to the following working conditions: free filed, distance from unit 1 m, dirteetivity factor Q=2.

Models and configuration

The **LCR** series comprises 15 models, only in the cooling version.

The numerous constructive options may be selected using the configuration scheme illustrated below.

The choice of some options can prevent the choice of others or render obligatory other fields. To contact the Galletti for verification

Code

It consists of 8 carachters, which show the range, the model, the operation mode and the power supply

	Series identification name
LCR	moto-evaporanting
	Model
055	provides general indications as to the cooling capacity of standard models
060	
070	
080	
090	
105	
115	
130	
150	
180	
205	
235	
250	
275	
300	
	Operation
C	cooling
	Version
S	standard
L	low noise

OPTION AND UNIT CONFIGURATION

15 fields which customise the unit complying with customer's requirements

10 11010		ustomise the unit complying with customer's requirements
Field	Name.	Description
1		ant / Power supply
2	2	R407C - 400/3/50 with 230V built in transformer
۷	0 0	ocessore / valvola espansione basic (μChiller2) + traditional valve
	A	basic (μChiller2) + electronic valve
	B	advanced (pCO) + traditional valve
	C	advanced (pCO) + electronic valve
3		sation control
	0	Not present
4	Heat re	•
<u>'</u>	0	Not present
5		communication
·	0	Not present
	1	RS232
	2	RS485
6		accessories
	0	Not present
	M	Pressure gauges
7		ssor options
	0	Not present
	1	Power factor correction capacitors
	2	Soft starter
	3	Power factor correction capacitors + Soft starter
8	Water o	ondenser options
	0	Not present
9	Remote	control board
	0	Not present
	S	simplified *
	M	μChiller2 microprocessor
	P	pCO microprocessor
10	Package	9
	0	standard
	1	Wooden crate
	2	Wooden box
11	Damper	S
	0	Not present
	G	base vibration dampers (rubber type)
12	Accesso	ries
	0	Not present
	1	Pair of VIC-TAULIC couplings (for in-out water connection)
	2	Paddle flow switch (standard differential pressure switch)
	3	Paddle flow switch + Pair of VIC-TAULIC couplings
13		ler / Remote condenser
	0	Not present
	A	dry cooler
	В	dry cooler with condensing control
	C	Remote condenser
	D	Remote condenser with condensing control
14		ler / Remote condenser
	0	Not present
	1	standard version: horizontal air flow
	2	standard version: vertical air flow
	3	low-noise version: horizontal air flow
	4	low-noise version: vertical air flow
15	Execution	
	0	standard
	1	special



^{*} In a Gewiss box with ON indicator light, low-priority alarm (e.g. pump breakdown), serious alarm (e.g. unit stopped) and ON-OFF switch. All powered at 24 Vac through an insulating transformer



Via Romagnoli 12/a - 40010 Bentivoglio Bologna Tel. +39 051 8908111 fax +39 051 8908122 www.galletti.it - info@galletti.it