

Galletti LCP

RANGE

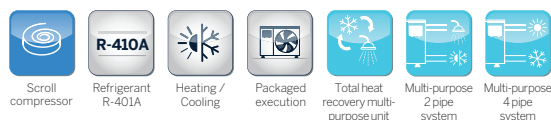
52 - 314 kW

FEATURES

- Manufactured in Italy
- Air to water
- Total heat recovery in two-pipe and four-pipe systems
- High efficiency under part load conditions
- Production of chilled water up to an air temperature of 51°C

WARRANTY

2 year



Description

LCP multi-purpose units are air conditioning and domestic hot water (DHW) production units conceived for both residential and industrial use and designed to operate 24 hours a day. They cover a wide range of heating capacities, from 52 to 314 kW, guaranteeing a high thermodynamic efficiency and broad configurability, both in terms of accessories and cooling circuits.

All units of the LCP series, regardless of size, can be also made in a low-noise configuration L, in which the compressors and compressor compartment are covered with sound-deadening material and the unit is specially dimensioned so as to be compatible with a reduced fan speed.

As for units with refrigerating capacity lower than 100 kW, LCP presents a solution with a double compressor divided into two independent thermodynamic circuits to always assure the unit operation.

As for units with cooling power higher than 100 kW, 4 compressors divided in two thermodynamic circuits are available in order to supply the unit power in four steps, perfectly adjusting it to the actual heat load of the system and to reduce inrush current.

LCP units can be coupled with both 2- and 4-pipe systems, the letter "P" indicates heat pump for 4-pipe systems and the letter "M" indicates multifunctional heat pump for 2-pipe systems.

In both versions, the machine uses the total heat recovery, when a request for contemporary production of cold water (cooling) and hot water (heating/DHW production) is needed.

The unit recovers the condensation heat of the cooling system that would otherwise be ejected into the atmosphere.

Main Components

Refrigerating circuits

Thanks to the presence of two independent thermodynamic circuits, the LCP M is capable of producing hot water for heating while simultaneously carrying out a defrost cycle or guaranteeing the replenishment of domestic hot water.

Heat exchanger

Hydrophilic finned block heat exchangers are installed; these break down the drops of water into particle and reduce the obstruction of the space between one fin and another caused by ice build-up. Thanks to a lower surface tension, the water tends to slide and precipitate by gravity, preventing the formation of frost at low temperatures.

Fans

4/6/8-pole axial-type fans with airfoil-shaped blades made of hybrid plastic/ aluminium material, statically and dynamically balanced in two planes, fitted with a protective grille and mounted with rubber vibration dampers placed in between. Option to select the condensation pressure- switch control with variation of the air-flow rate through electronic switching operated fans, to operate in cooling mode at low temperatures (up to -15 °C)

Compressors

The scroll compressor today represents the best solution in terms of reliability and efficiency in the range of capacities up to 200 kW per circuit and the best solution in terms of sound power emitted. The use of scroll compressors makes it possible to use low-viscosity oils which, compared to solutions with oil at a high viscosity level, reduce thermal resistance at the evaporator with increases in the evaporation temperature of over 1.5 °C (more than a 5.5% gain in terms of EER) compared to alternative solutions.

Electronic microprocessor controller

LCP units are supplied with an Advanced microprocessor controller. In addition to the functions described below, this microprocessor offers the option of custom software features to ensure optimal satisfaction of all system requirements, including control of the unit with step-control or cascade logic. As regards remote communication options, the controls are configured for a connection to advanced BMS systems.

Configuration

The models are completely configurable by selecting the version and the options. To the right is shown an example of configuration.

Version	Fields	1	2	3	4	5	6	7	8	9	10	11	12
LCP144PL		0	C	1	0	1	C	P	1	0	0	G	3

AVAILABLE VERSIONS

2-pipe system versions

LCP..MS Standard execution
LCP..ML Low noise execution

4-pipe system versions

LCP..PS Standard execution
LCP..PL Low noise execution

CONFIGURATION OPTIONS

1 - Power supply

- 0 400 V - 3 N - 50 Hz
- 1 400 V - 3 - 50 Hz
- 2 400 V - 3 N - 50 Hz + magnetic breakers
- 3 400 V - 3 - 50 Hz + magnetic breakers

2 - Onboard controller and expansion valve

- C Advanced + mechanical expansion valve

3 - User side water pump

- 0 Absent
- 1 LP pump + expansion vessel
- 2 HP pump + expansion vessel
- 3 Double pump LP parallel operation and expansion vessel (advanced controller required)
- 4 Double pump HP parallel operation and expansion vessel (advanced controller required)
- 5 LP run and standby double pump + expansion vessel
- 6 HP run and standby double pump + expansion vessel

4 - Water buffer tank

- 0 Absent
- R Selected recovery side
- S Selected user side

5 - Recovery water pump

- 0 Absent
- 1 LP pump + expansion vessel
- 2 HP pump + expansion vessel
- 3 Double pump LP parallel operation and expansion vessel (advanced controller required)
- 4 Double pump HP parallel operation and expansion vessel (advanced controller required)
- 5 LP run and standby double pump + expansion vessel
- 6 HP run and standby double pump + expansion vessel

6 - Air flow modulation

- C Condensation control by phase-cut fans
- E Condensation control performed by EC fans

7 - Antifreezing kit

- 0 Absent
- E Plate exchanger
- P Plate exchanger and water pump
- S Plate exchanger, water pump and inertial tank

8 - Remote communication

- 0 Absent
- 1 RS485 serial board (Carel / Modbus protocol)
- 2 LON FTT10 serial board (advanced controller required)
- 3 GSM modem board (advanced controller required)
- 4 BACNET IP / PCOWEB serial board + supervision software Gweb (advanced controller required)
- 5 BACNET IP / PCOWEB serial board + clock board + supervision software Gweb (advanced controller required)

9 - Special coils / Protective treatments

- 0 Standard
- B Pre-painted fins with epoxy painting
- C Cataphoresis
- R Copper-copper

10 - Packing

- 0 Standard
- 1 Wooden cage
- 2 Wooden crate

11 - Anti vibration shock mounts

- 0 Absent
- G Rubber anti vibration shock mounts
- M Spring anti vibration shock mounts

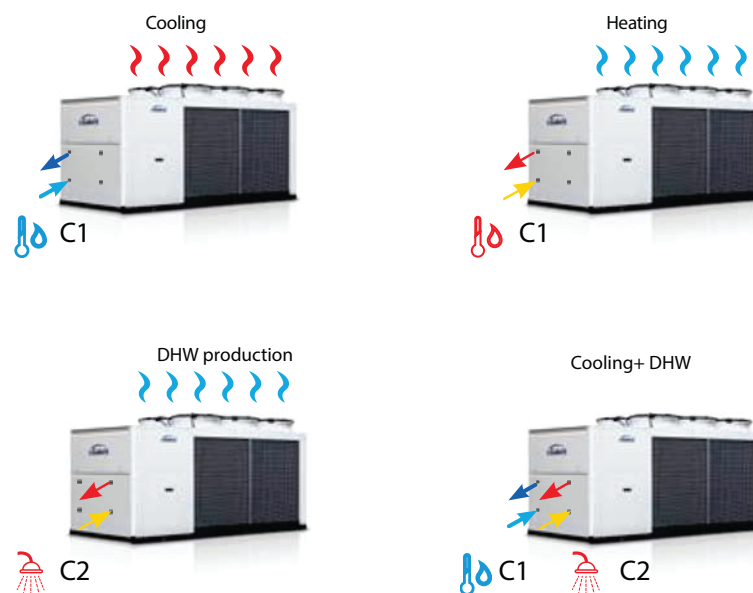
12 - Remote control

- 0 Absent
- 3 Remote simplified user panel for advanced controller

Accessories

A	Power factor capacitors	G	Filter isolation valves kit (solenoid valve and isolation valve)
B	Soft starter	H	Directives reference other than "2014/68/UE - PED"
C	ON/OFF status of the compressors	I	Unit lifting pipes
D	Two pairs of Victaulic joints	L	Outdoor finned coil heat exchanger protection grille
E	Set point compensation outdoor temperature probe	M	Outdoor finned coil heat exchanger protection filters
F	Refrigerant pressure gauges		

LCP M - 2-pipe system

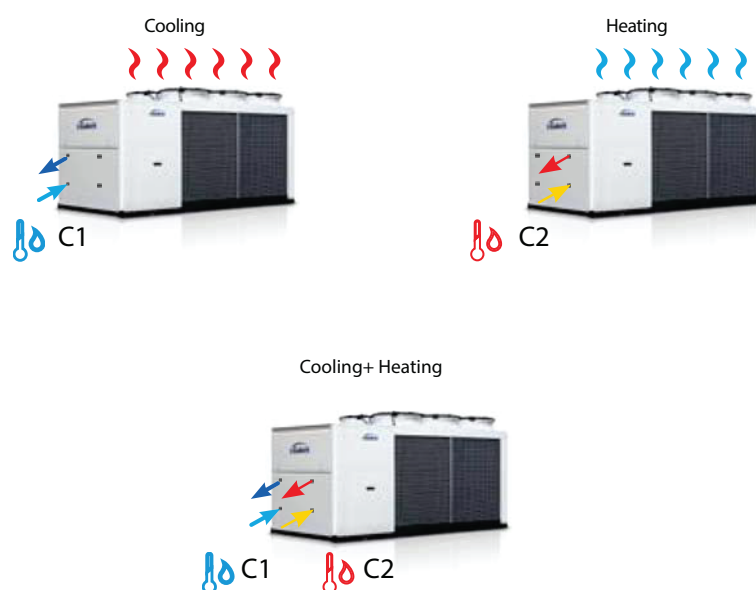


Operating modes available for an LCP M unit which interfaces with a 2-pipe system.

C1 Hydraulic circuit manages winter heating and summer air-conditioning while the C2 one is used for the production of DHW, ensuring this function 365 days per year.

In case of simultaneous production of cold (C1) and high-temperature water for domestic use (C2), the machine is able to recover all the condensation heat on the refrigerant for the production of DHW.

LCP P - 4-pipe system



Operating modes available for an LCP P unit which interfaces with a 4-pipe air conditioning system.

In this kind of systems, it is possible to request air-conditioning and heating at the same time. For this reason, C1 and C2 hydraulic circuits respectively produce cold and hot water.

In case of simultaneous operation of C1 and C2 hydraulic circuits, the condensation heat of the cooling system is totally recovered for the production of hot water.



Rated Technical Data

LCP MS			41	51	61	71	81	94	104	124
Power supply		V-ph-Hz	400 - 3N - 50							
Cooling mode operation										
Cooling capacity	(1)(E)	kW	51,4	56,1	67,3	73,8	82,4	102	111	134
Total power input	(1)(E)	kW	16,2	18,3	20,8	23,4	27,0	32,7	37,1	44,1
EER	(1)(E)		3,17	3,07	3,24	3,15	3,06	3,10	3,00	3,04
Water flow	(1)	l/h	8874	9695	11616	12743	14227	17571	19157	23115
Water pressure drop	(1)(E)	kPa	29	34	34	41	32	37	43	45
Cooling mode operation and DHW in total recovery										
Cooling capacity	(2)(E)	kW	46,2	50,6	60,1	66,1	78,8	92,5	101	119
Heating capacity	(3)(E)	kW	61,5	67,9	79,7	88,3	104	123	136	158
Total power input	(4)(E)	kW	16,1	18,1	20,6	23,3	26,0	32,1	36,2	41,4
COP HRE	(4)(E)		6,67	6,54	6,77	6,61	7,01	6,71	6,53	6,67
Water flow user side	(2)	l/h	8874	9695	11616	12743	14227	17571	19157	23115
Water pressure drop user side	(2)(E)	kPa	29	34	34	41	32	37	43	45
Water flow DHW side	(3)	l/h	9744	10724	12702	13941	15534	19118	21122	24802
Water pressure drop DHW side	(3)(E)	kPa	35	42	41	49	39	44	52	52
Heating or DHW operation										
Heating capacity	(3)(E)	kW	56,6	62,4	73,8	81,0	89,8	111	123	144
Total power input	(3)(E)	kW	16,8	18,7	21,9	24,4	26,5	33,4	37,2	45,6
COP	(3)(E)		3,37	3,32	3,37	3,32	3,38	3,33	3,30	3,16
Water flow	(3)	l/h	9744	10724	12702	13941	15534	19118	21122	24802
Water pressure drop	(3)(E)	kPa	35	42	41	49	39	44	52	52
General data										
Maximum current absorption		A	41	44	51	55	66	81	87	96
Star up current		A	159	162	185	183	191	194	198	220
Star up current with soft starter		A	88	101	111	124	139	122	137	146
Compressors / circuits			2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	4 / 2	4 / 2	4 / 2
Expansion vessel volume		dm³	8	8	8	8	8	8	8	24
Buffer tank volume		dm³	200	200	220	220	220	340	340	600
Sound power level	(6)(E)	dB(A)	81	81	82	82	83	83	83	84
Transport weight unit with pump and tank		kg	882	690	800	810	850	1190	1210	1530
Operating weight unit with pump and full tank		kg	1082	1082	1082	1082	1082	1082	1082	1082

- (1) Outdoor air temperature 35°C, water temperature 12°C / 7°C (EN14511:2013)
 (2) Cooling water temperature 7°C, water flow rate same as in cooling mode
 (3) Recovery water temperature 45°C, water flow rate same as in cooling mode
 (4) Cooling water temperature 7°C, recovery water temperature 45°C
 (5) Outdoor air temperature dry bulb 7°C / wet bulb 6°C, water temperature 40°C / 45°C (EN14511:2013)
 (6) Sound power level measured according to ISO 9614
 (E) EUROVENT certified data

Rated Technical Data Continued

LCP MS			144	164	194	214	244	274	294	324
Power supply		V-ph-Hz	400 - 3N - 50							
Cooling mode operation										
Cooling capacity	(1)(E)	kW	147	166	193	220	238	263	298	312
Total power input	(1)(E)	kW	49,2	55,6	66,9	75,7	84,2	92,4	103	117
EER	(1)(E)		2,99	2,98	2,87	2,90	2,81	2,85	2,88	2,68
Water flow	(1)	l/h	25411	28617	33237	37885	40949	45370	51321	53968
Water pressure drop	(1)(E)	kPa	54	49	46	59	58	39	48	63
Cooling mode operation and DHW in total recovery										
Cooling capacity	(2)(E)	kW	130	150	185	208	230	253	287	304
Heating capacity	(3)(E)	kW	175	200	244	276	304	334	379	407
Total power input	(4)(E)	kW	46,8	52,6	61,5	72,2	78,4	85,2	96,2	108
COP HRE	(4)(E)		6,51	6,63	6,97	6,69	6,81	6,87	6,91	6,59
Water flow user side	(2)	l/h	25411	28617	33237	37885	40949	45370	51321	53968
Water pressure drop user side	(2)(E)	kPa	54	49	46	59	58	39	48	63
Water flow DHW side	(3)	l/h	27348	31445	35879	42793	45279	51196	57519	59230
Water pressure drop DHW side	(3)(E)	kPa	63	59	54	75	71	60	73	76
Heating or DHW operation										
Heating capacity	(3)(E)	kW	159	182	209	248	263	296	333	343
Total power input	(3)(E)	kW	50,6	56,3	65,3	74,6	80,6	88,6	99,3	110
COP	(3)(E)		3,13	3,23	3,19	3,31	3,26	3,34	3,35	3,11
Water flow	(3)	l/h	27348	31445	35879	42793	45279	51196	57519	59230
Water pressure drop	(3)(E)	kPa	63	59	54	75	71	60	73	76
General data										
Maximum current absorption		A	105	126	148	167	190	215	229	242
Star up current		A	222	241	307	318	382	398	464	472
Star up current with soft starter		A	163	189	245	256	317	333	381	389
Compressors / circuits			4 / 2							
Expansion vessel volume		dm³	24	24	24	24	24	24	24	24
Buffer tank volume		dm³	600	600	600	600	600	765	765	765
Sound power level	(6)(E)	dB(A)	84	86	86	87	87	87	88	88
Transport weight unit with pump and tank		kg	1550	1690	1890	1890	1910	2260	2290	2320
Operating weight unit with pump and full tank		kg	1082	1082	1082	1082	1082	1082	1082	1082

- (1) Outdoor air temperature 35°C, water temperature 12°C / 7°C (EN14511:2013)
 (2) Cooling water temperature 7°C, water flow rate same as in cooling mode
 (3) Recovery water temperature 45°C, water flow rate same as in cooling mode
 (4) Cooling water temperature 7°C, recovery water temperature 45°C
 (5) Outdoor air temperature dry bulb 7°C / wet bulb 6°C, water temperature 40°C / 45°C (EN14511:2013)
 (6) Sound power level measured according to ISO 9614
 (E) EUROVENT certified data

Rated Technical Data Continued

LCP ML			41	51	61	71	81	9	104	124
Power supply		V-ph-Hz	400 - 3N - 50							
Cooling mode operation										
Cooling capacity	(1)(E)	kW	48,0	52,1	64,7	70,4	78,3	97,6	105	127
Total power input	(1)(E)	kW	16,4	18,8	20,9	24,0	28,1	33,5	38,3	45,0
EER	(1)(E)		3,01	2,85	3,10	2,93	2,80	2,93	2,75	2,82
Water flow	(1)	l/h	8265	8961	11172	12153	13513	16855	18189	21904
Water pressure drop	(1)(E)	kPa	18	21	32	38	30	34	39	41
Cooling mode operation and DHW in total recovery										
Cooling capacity	(2)(E)	kW	46,4	50,8	60,3	66,3	76,5	92,8	102	119
Heating capacity	(3)(E)	kW	61,6	68,0	79,9	88,5	101	123	136	158
Total power input	(4)(E)	kW	16,0	18,1	20,6	23,3	26,0	32,1	36,1	41,3
COP HRE	(4)(E)		6,74	6,55	6,79	6,63	6,83	6,73	6,57	6,71
Water flow user side	(2)	l/h	8265	8961	11172	12153	13513	16855	18189	21904
Water pressure drop user side	(2)(E)	kPa	18	21	32	38	30	34	39	41
Water flow DHW side	(3)	l/h	9527	10446	12436	13780	15388	18720	20473	24392
Water pressure drop DHW side	(3)(E)	kPa	23	28	40	48	38	42	49	50
Heating or DHW operation										
Heating capacity	(3)(E)	kW	55,4	60,7	72,0	79,8	89,0	109	119	141
Total power input	(3)(E)	kW	15,8	17,8	20,2	22,7	25,6	31,5	35,2	42,9
COP	(3)(E)		3,59	3,53	3,56	3,52	3,48	3,54	3,48	3,29
Water flow	(3)	l/h	9527	10446	12436	13780	15388	18720	20473	24392
Water pressure drop	(3)(E)	kPa	23	28	40	48	38	42	49	50
General data										
Maximum current absorption		A	41	44	51	55	66	81	87	96
Star up current		A	159	162	185	183	191	194	198	220
Star up current with soft starter		A	88	101	111	124	139	122	137	146
Compressors / circuits			2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	4 / 2	4 / 2	4 / 2
Expansion vessel volume		dm³	8	8	8	8	8	8	8	24
Buffer tank volume		dm³	200	200	220	220	220	340	340	600
Sound power level	(6)(E)	dB(A)	75	75	77	77	78	77	77	79
Transport weight unit with pump and tank		kg	892	700	810	820	860	1210	1230	1550
Operating weight unit with pump and full tank		kg	1092	1102	1260	1270	1310	1860	1880	2425

- (1) Outdoor air temperature 35°C, water temperature 12°C / 7°C (EN14511:2013)
 (2) Cooling water temperature 7°C, water flow rate same as in cooling mode
 (3) Recovery water temperature 45°C, water flow rate same as in cooling mode
 (4) Cooling water temperature 7°C, recovery water temperature 45°C
 (5) Outdoor air temperature dry bulb 7°C / wet bulb 6°C, water temperature 40°C / 45°C (EN14511:2013)
 (6) Sound power level measured according to ISO 9614
 (E) EUROVENT certified data

Rated Technical Data Continued

LCP ML			144	164	194	214	244	274	294	324
Power supply		V-ph-Hz	400 - 3N - 50							
Cooling mode operation										
Cooling capacity	(1)(E)	kW	138	156	187	209	226	258	291	303
Total power input	(1)(E)	kW	51,2	57,1	67,4	77,0	86,7	92,7	105	119
EER	(1)(E)		2,69	2,59	2,78	2,82	2,73	2,79	2,79	2,55
Water flow	(1)	l/h	23786	26763	32255	35917	38875	44458	50140	52308
Water pressure drop	(1)(E)	kPa	48	30	44	55	29	38	46	60
Cooling mode operation and DHW in total recovery										
Cooling capacity	(2)(E)	kW	131	150	180	204	228	252	283	308
Heating capacity	(3)(E)	kW	175	200	238	272	302	334	375	411
Total power input	(4)(E)	kW	46,7	52,6	61,6	72,1	78,8	85,5	96,5	108
COP HRE	(4)(E)		6,55	6,63	6,77	6,59	6,71	6,85	6,81	6,67
Water flow user side	(2)	l/h	23786	26763	32255	35917	38875	44458	50140	52308
Water pressure drop user side	(2)(E)	kPa	48	30	44	55	29	38	46	60
Water flow DHW side	(3)	l/h	27027	30857	35499	41320	44858	50963	56026	59230
Water pressure drop DHW side	(3)(E)	kPa	62	57	53	72	39	59	57	75
Heating or DHW operation										
Heating capacity	(3)(E)	kW	156	178	206	240	261	295	326	343
Total power input	(3)(E)	kW	48,0	54,1	63,2	72,5	78,6	86,4	97,9	108
COP	(3)(E)		3,26	3,30	3,38	3,42	3,43	3,41	3,44	3,14
Water flow	(3)	l/h	27027	30857	35499	41320	44858	50963	56026	59230
Water pressure drop	(3)(E)	kPa	62	57	53	72	39	59	57	75
General data										
Maximum current absorption		A	105	126	148	167	190	215	229	242
Star up current		A	222	241	307	318	382	398	464	472
Star up current with soft starter		A	163	189	245	256	317	333	381	389
Compressors / circuits			4 / 2							
Expansion vessel volume		dm³	24	24	24	24	24	24	24	24
Buffer tank volume		dm³	600	600	600	600	600	765	765	765
Sound power level	(6)(E)	dB(A)	79	82	83	83	83	84	85	85
Transport weight unit with pump and tank		kg	1570	1710	1920	1920	1940	2290	2320	2350
Operating weight unit with pump and full tank		kg	2445	2585	2828	2828	2890	3405	3435	3465

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 (3) Recovery water temperature 45°C, water flow rate same as in cooling mode
 (4) Cooling water temperature 7°C, recovery water temperature 45°C
 (5) Outdoor air temperature dry bulb 7°C / wet bulb 6°C, water temperature 40°C / 45°C (EN14511:2013)
 (6) Sound power level measured according to ISO 9614
 (E) EUROVENT certified data



Rated Technical Data Continued

LCP PS			41	51	61	71	81	9	104	124
Power supply		V-ph-Hz	400 - 3N - 50							
Cooling mode operation										
Cooling capacity	(1)(E)	kW	51,4	56,1	67,3	73,8	82,4	102	111	134
Total power input	(1)(E)	kW	16,2	18,3	20,8	23,4	27,0	32,7	37,1	44,1
EER	(1)(E)		3,17	3,07	3,24	3,15	3,06	3,10	3,00	3,04
Water flow	(1)	l/h	8874	9695	11616	12743	14227	17571	19157	23115
Water pressure drop	(1)(E)	kPa	29	34	34	41	32	37	43	45
Cooling mode operation and DHW in total recovery										
Cooling capacity	(2)(E)	kW	46,2	50,6	60,1	66,1	78,8	92,5	101	119
Heating capacity	(3)(E)	kW	61,5	67,9	79,7	88,3	104	123	136	158
Total power input	(4)(E)	kW	16,1	18,1	20,6	23,3	26,0	32,1	36,2	41,4
COP HRE	(4)(E)		6,67	6,54	6,77	6,61	7,01	6,71	6,53	6,67
Water flow user side	(2)	l/h	8874	9695	11616	12743	14227	17571	19157	23115
Water pressure drop user side	(2)(E)	kPa	29	34	34	41	32	37	43	45
Water flow DHW side	(3)	l/h	9744	10724	12702	13941	15534	19118	21122	24802
Water pressure drop DHW side	(3)(E)	kPa	35	42	41	49	39	44	52	52
Heating or DHW operation										
Heating capacity	(3)(E)	kW	56,6	62,4	73,8	81,0	89,8	111	123	144
Total power input	(3)(E)	kW	16,8	18,7	21,9	24,4	26,5	33,4	37,2	45,6
COP	(3)(E)		3,37	3,32	3,37	3,32	3,38	3,33	3,30	3,16
Water flow	(3)	l/h	9744	10724	12702	13941	15534	19118	21122	24802
Water pressure drop	(3)(E)	kPa	35	42	41	49	39	44	52	52
General data										
Maximum current absorption		A	41	44	51	55	66	81	87	96
Star up current		A	159	162	185	183	191	194	198	220
Star up current with soft starter		A	88	101	111	124	139	122	137	146
Compressors / circuits			2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	4 / 2	4 / 2	4 / 2
Expansion vessel volume		dm³	8	8	8	8	8	8	8	24
Buffer tank volume		dm³	200	200	220	220	220	340	340	600
Sound power level	(6)(E)	dB(A)	80	80	81	81	81	82	82	84
Transport weight unit with pump and tank		kg	882	892	1030	1040	1080	1500	1520	1805
Operating weight unit with pump and full tank		kg	1082	1092	1250	1260	1300	1840	1860	2405

- (1) Outdoor air temperature 35°C, water temperature 12°C / 7°C (EN14511:2013)
 (2) Cooling water temperature 7°C, water flow rate same as in cooling mode
 (3) Recovery water temperature 45°C, water flow rate same as in cooling mode
 (4) Cooling water temperature 7°C, recovery water temperature 45°C
 (5) Outdoor air temperature dry bulb 7°C / wet bulb 6°C, water temperature 40°C / 45°C (EN14511:2013)
 (6) Sound power level measured according to ISO 9614
 (E) EUROVENT certified data

Rated Technical Data Continued

LCP PS			144	164	194	214	244	274	294	324
Power supply		V-ph-Hz	400 - 3N - 50							
Cooling mode operation										
Cooling capacity	(1)(E)	kW	147	166	193	220	238	263	298	312
Total power input	(1)(E)	kW	49,2	55,6	66,9	75,7	84,2	92,4	103	117
EER	(1)(E)		2,99	2,98	2,87	2,90	2,81	2,85	2,88	2,68
Water flow	(1)	l/h	25411	28617	33237	37885	40949	45370	51321	53968
Water pressure drop	(1)(E)	kPa	54	49	46	59	58	39	48	63
Cooling mode operation and DHW in total recovery										
Cooling capacity	(2)(E)	kW	130	150	185	208	230	253	287	304
Heating capacity	(3)(E)	kW	175	200	244	276	304	334	379	407
Total power input	(4)(E)	kW	46,8	52,6	61,5	72,2	78,4	85,2	96,2	108
COP HRE	(4)(E)		6,51	6,63	6,97	6,69	6,81	6,87	6,91	6,59
Water flow user side	(2)	l/h	25411	28617	33237	37885	40949	45370	51321	53968
Water pressure drop user side	(2)(E)	kPa	54	49	46	59	58	39	48	63
Water flow DHW side	(3)	l/h	27348	31445	35879	42793	45279	51196	57519	59230
Water pressure drop DHW side	(3)(E)	kPa	63	59	54	75	71	60	73	76
Heating or DHW operation										
Heating capacity	(3)(E)	kW	159	182	209	248	263	296	333	343
Total power input	(3)(E)	kW	50,6	56,3	65,3	74,6	80,6	88,6	99,3	110
COP	(3)(E)		3,13	3,23	3,19	3,31	3,26	3,34	3,35	3,11
Water flow	(3)	l/h	27348	31445	35879	42793	45279	51196	57519	59230
Water pressure drop	(3)(E)	kPa	63	59	54	75	71	60	73	76
General data										
Maximum current absorption		A	105	126	148	167	190	215	229	242
Star up current		A	222	241	307	318	382	398	464	472
Star up current with soft starter		A	163	189	245	256	317	333	381	389
Compressors / circuits			4 / 2							
Expansion vessel volume		dm³	24	24	24	24	24	24	24	24
Buffer tank volume		dm³	600	600	600	600	600	765	765	765
Sound power level	(6)(E)	dB(A)	84	85	85	86	86	86	87	87
Transport weight unit with pump and tank		kg	1825	1965	2198	2198	2260	2610	2640	2670
Operating weight unit with pump and full tank		kg	2425	2565	2798	2798	2860	3375	3405	3435

- (1) Outdoor air temperature 35°C, water temperature 12°C / 7°C (EN14511:2013)
 (2) Cooling water temperature 7°C, water flow rate same as in cooling mode
 (3) Recovery water temperature 45°C, water flow rate same as in cooling mode
 (4) Cooling water temperature 7°C, recovery water temperature 45°C
 (5) Outdoor air temperature dry bulb 7°C / wet bulb 6°C, water temperature 40°C / 45°C (EN14511:2013)
 (6) Sound power level measured according to ISO 9614
 (E) EUROVENT certified data

Rated Technical Data Continued

LCP PL			41	51	61	71	81	9	104	124
Power supply		V-ph-Hz	400 - 3N - 50							
Cooling mode operation										
Cooling capacity	(1)(E)	kW	48,0	52,1	64,7	70,4	78,3	97,6	105	127
Total power input	(1)(E)	kW	16,4	18,8	20,9	24,0	28,1	33,5	38,3	45,0
EER	(1)(E)		3,01	2,85	3,10	2,93	2,80	2,93	2,75	2,82
Water flow	(1)	l/h	8265	8961	11172	12153	13513	16855	18189	21904
Water pressure drop	(1)(E)	kPa	18	21	32	38	30	34	39	41
Cooling mode operation and DHW in total recovery										
Cooling capacity	(2)(E)	kW	46,4	50,8	60,3	66,3	76,5	92,8	102	119
Heating capacity	(3)(E)	kW	61,6	68,0	79,9	88,5	101	123	136	158
Total power input	(4)(E)	kW	16,0	18,1	20,6	23,3	26,0	32,1	36,1	41,3
COP HRE	(4)(E)		6,74	6,55	6,79	6,63	6,83	6,73	6,57	6,71
Water flow user side	(2)	l/h	8265	8961	11172	12153	13513	16855	18189	21904
Water pressure drop user side	(2)(E)	kPa	18	21	32	38	30	34	39	41
Water flow DHW side	(3)	l/h	9527	10446	12436	13780	15388	18720	20473	24392
Water pressure drop DHW side	(3)(E)	kPa	23	28	40	48	38	42	49	50
Heating or DHW operation										
Heating capacity	(3)(E)	kW	55,4	60,7	72,0	79,8	89,0	109	119	141
Total power input	(3)(E)	kW	15,8	17,8	20,2	22,7	25,6	31,5	35,2	42,9
COP	(3)(E)		3,59	3,53	3,56	3,52	3,48	3,54	3,48	3,29
Water flow	(3)	l/h	9527	10446	12436	13780	15388	18720	20473	24392
Water pressure drop	(3)(E)	kPa	23	28	40	48	38	42	49	50
General data										
Maximum current absorption		A	41	44	51	55	66	81	87	96
Star up current		A	159	162	185	183	191	194	198	220
Star up current with soft starter		A	88	101	111	124	139	122	137	146
Compressors / circuits			2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	4 / 2	4 / 2	4 / 2
Expansion vessel volume		dm³	8	8	8	8	8	8	8	24
Buffer tank volume		dm³	200	200	220	220	220	340	340	600
Sound power level	(6)(E)	dB(A)	73	74	76	76	76	77	77	79
Transport weight unit with pump and tank		kg	892	902	1040	1050	1090	1520	1540	1825
Operating weight unit with pump and full tank		kg	1092	1102	1260	1270	1310	1860	1880	2425

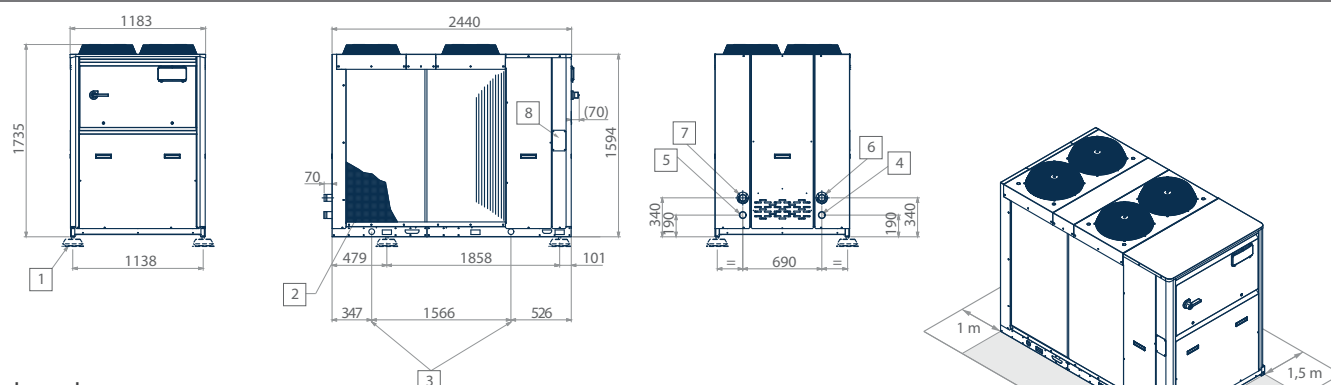
- (1) Outdoor air temperature 35°C, water temperature 12°C / 7°C (EN14511:2013)
 (2) Cooling water temperature 7°C, water flow rate same as in cooling mode
 (3) Recovery water temperature 45°C, water flow rate same as in cooling mode
 (4) Cooling water temperature 7°C, recovery water temperature 45°C
 (5) Outdoor air temperature dry bulb 7°C / wet bulb 6°C, water temperature 40°C / 45°C (EN14511:2013)
 (6) Sound power level measured according to ISO 9614
 (E) EUROVENT certified data

Rated Technical Data Continued

LCP PL			144	164	194	214	244	274	294	324
Power supply		V-ph-Hz	400 - 3N - 50							
Cooling mode operation										
Cooling capacity	(1)(E)	kW	138	156	187	209	226	258	291	303
Total power input	(1)(E)	kW	51,2	57,1	67,4	77,0	86,7	92,7	105	119
EER	(1)(E)		2.69	2.59	2.78	2.82	2.73	2.79	2.79	2.55
Water flow	(1)	l/h	23786	26763	32255	35917	38875	44458	50140	52308
Water pressure drop	(1)(E)	kPa	48	30	44	55	29	38	46	60
Cooling mode operation and DHW in total recovery										
Cooling capacity	(2)(E)	kW	131	150	180	204	228	252	283	308
Heating capacity	(3)(E)	kW	175	200	238	272	302	334	375	411
Total power input	(4)(E)	kW	46,7	52,6	61,6	72,1	78,8	85,5	96,5	108
COP HRE	(4)(E)		6.55	6.63	6.77	6.59	6.71	6.85	6.81	6.67
Water flow user side	(2)	l/h	23786	26763	32255	35917	38875	44458	50140	52308
Water pressure drop user side	(2)(E)	kPa	48	30	44	55	29	38	46	60
Water flow DHW side	(3)	l/h	27027	30857	35499	41320	44858	50963	56026	59230
Water pressure drop DHW side	(3)(E)	kPa	62	57	53	72	39	59	57	75
Heating or DHW operation										
Heating capacity	(3)(E)	kW	156	178	206	240	261	295	326	343
Total power input	(3)(E)	kW	48,0	54,1	63,2	72,5	78,6	86,4	97,9	108
COP	(3)(E)		3,26	3,30	3,38	3,42	3,43	3,41	3,44	3,14
Water flow	(3)	l/h	27027	30857	35499	41320	44858	50963	56026	59230
Water pressure drop	(3)(E)	kPa	62	57	53	72	39	59	57	75
General data										
Maximum current absorption		A	105	126	148	167	190	215	229	242
Star up current		A	222	241	307	318	382	398	464	472
Star up current with soft starter		A	163	189	245	256	317	333	381	389
Compressors / circuits			4 / 2							
Expansion vessel volume		dm³	24	24	24	24	24	24	24	24
Buffer tank volume		dm³	600	600	600	600	600	765	765	765
Sound power level	(6)(E)	dB(A)	79	80	81	82	82	83	83	83
Transport weight unit with pump and tank		kg	1845	1985	2228	2228	2290	2640	2670	2700
Operating weight unit with pump and full tank		kg	2445	2585	2828	2828	2890	3405	3435	3465

- (1) Outdoor air temperature 35°C, water temperature 12°C / 7°C (EN14511:2013)
 (2) Cooling water temperature 7°C, water flow rate same as in cooling mode
 (3) Recovery water temperature 45°C, water flow rate same as in cooling mode
 (4) Cooling water temperature 7°C, recovery water temperature 45°C
 (5) Outdoor air temperature dry bulb 7°C / wet bulb 6°C, water temperature 40°C / 45°C (EN14511:2013)
 (6) Sound power level measured according to ISO 9614
 (E) EUROVENT certified data

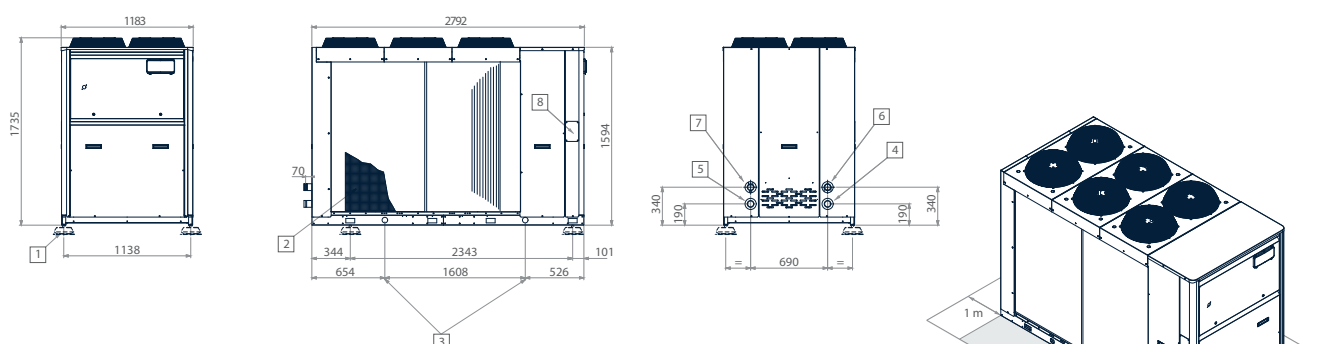
Dimensions LCP 41 - 51



Legend

1	Vibration dampers	5	Cold water inlet (Victralic 2")
2	Protection grill (optional)	6	Hot water outlet (Victralic 2")
3	Lifting points	7	Cold water outlet (Victralic 2")
4	Hot water inlet (Victralic 2")	8	Power supply input

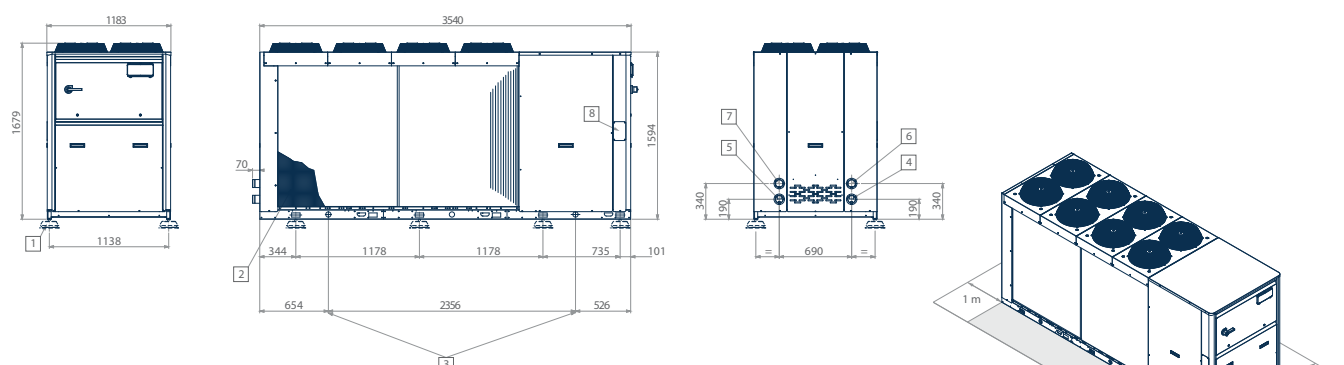
Dimensions LCP 61 - 81



Legend

1	Vibration dampers	5	Cold water inlet (Victralic 2")
2	Protection grill (optional)	6	Hot water outlet (Victralic 2")
3	Lifting points	7	Cold water outlet (Victralic 2")
4	Hot water inlet (Victralic 2")	8	Power supply input

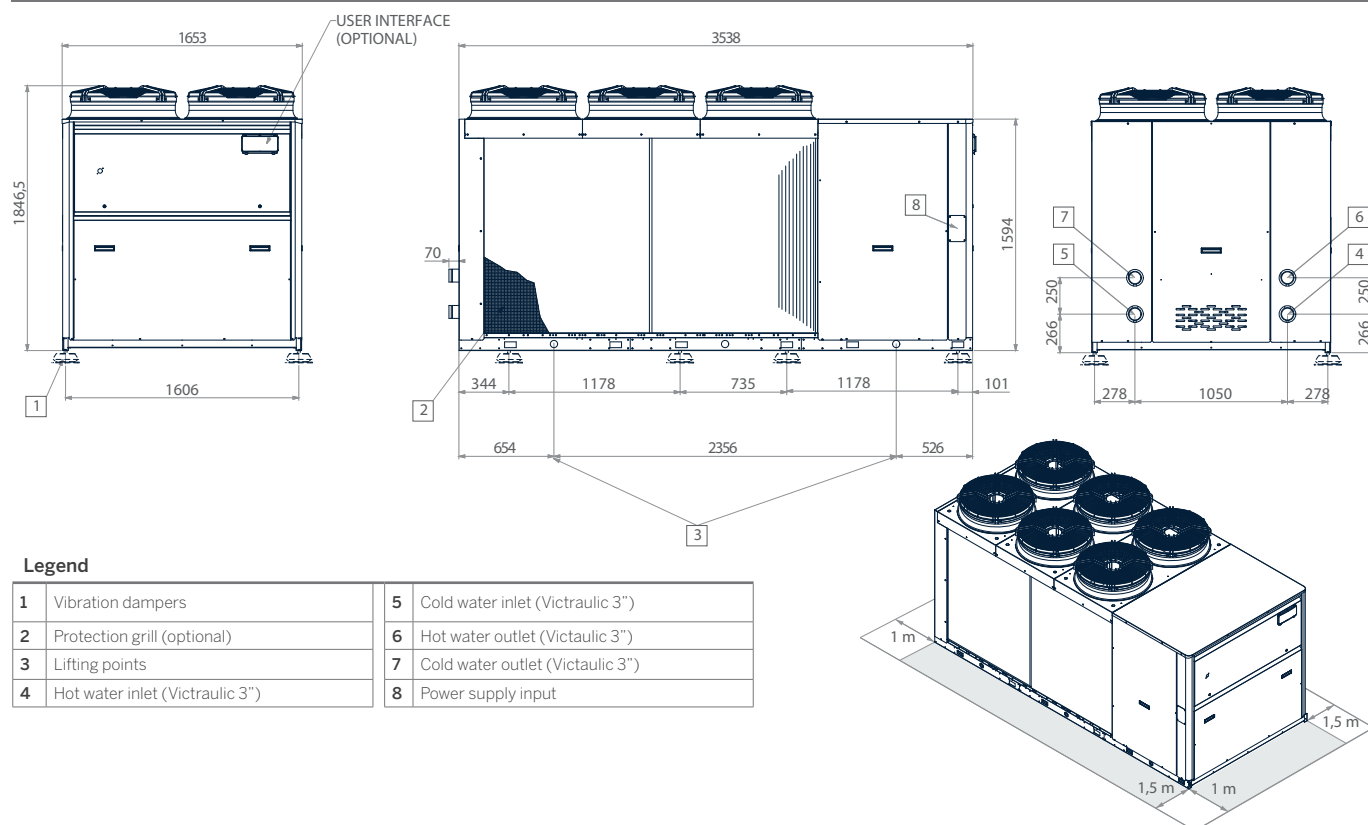
Dimensions LCP 94 - 104



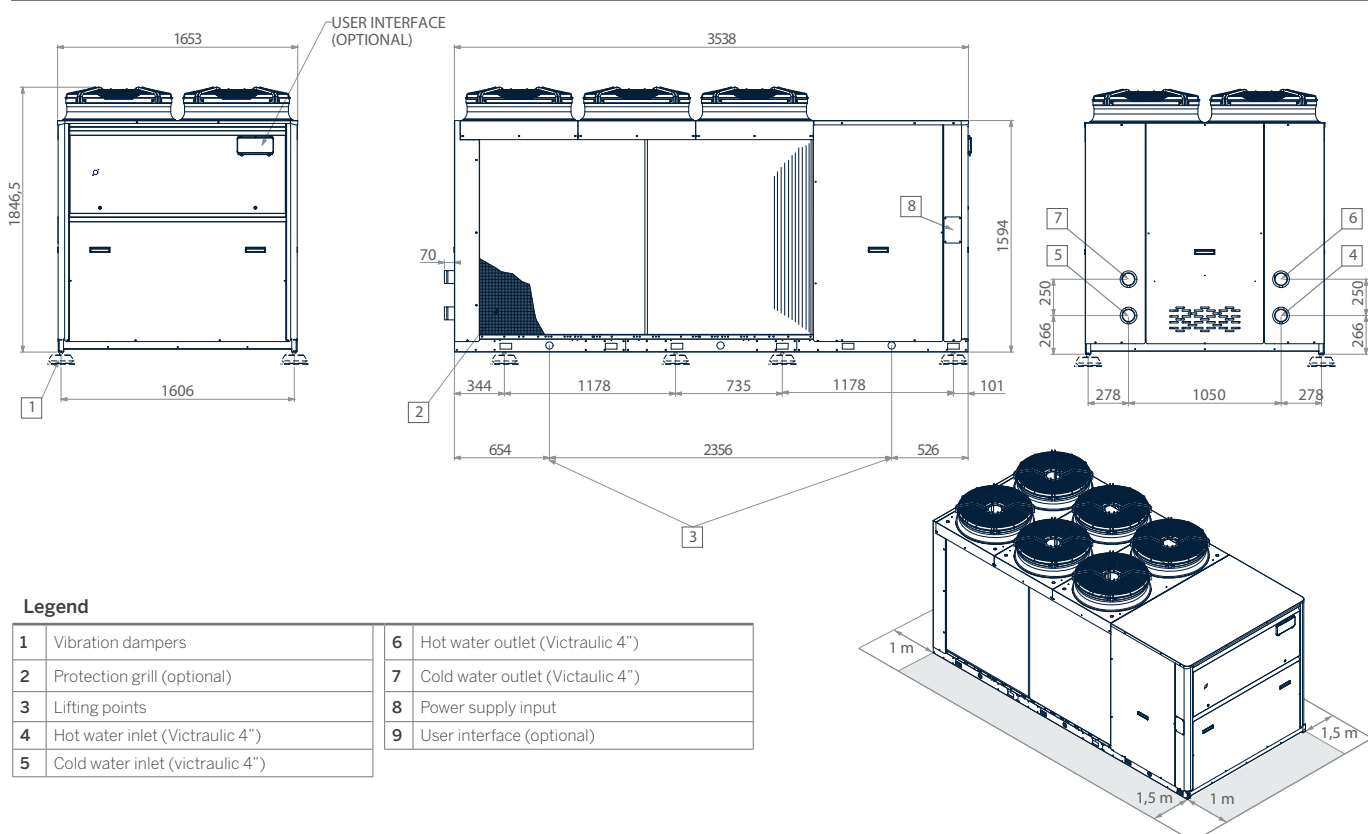
Legend

1	Vibration dampers	5	Cold water inlet (Victralic 2 1/2")
2	Protection grill (optional)	6	Hot water outlet (Victralic 2 1/2")
3	Lifting points	7	Cold water outlet (Victralic 2 1/2")
4	Hot water inlet (Victralic 2 1/2")	8	Power supply input

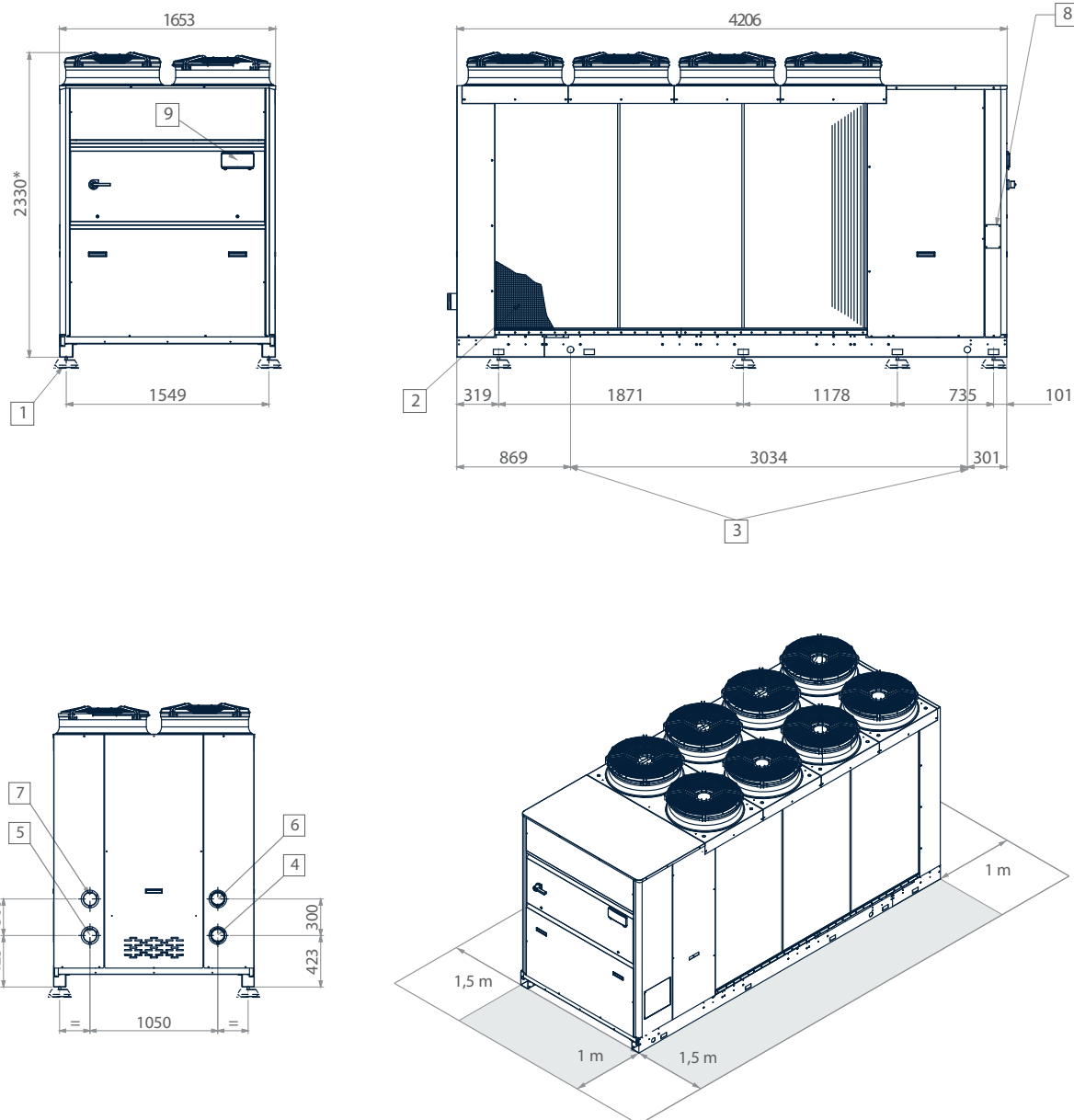
Dimensions LCP 124 - 164



Dimensions LCP 194 - 244



Dimensions 274 - 324



Legend

1	Vibration dampers	6	Hot water outlet (Victralic 4")
2	Protection grill (optional)	7	Cold water outlet (Victralic 4")
3	Lifting points	8	Power supply input
4	Hot water inlet (Victralic 4")	9	User interface (optional)
5	Cold water inlet (victralic 4")		