

# TECHNICAL MANUAL

## WLE

Chillers and heat pumps  
42 kW - 750 kW



R-454B  
refrigerant



A2L gas leak  
detection



Scroll  
compressor



Cooling only



Heating/Cooling

### PLUS

- » Refrigerant with GWP of less than 500
- » Electronic expansion valve
- » Up to 6 compressors
- » 1 or 2 cooling circuits
- » Remote connectivity with the most common protocols
- » Compact dimensions
- » 3 different acoustic configurations
- » High seasonal efficiency values

CE

Dear Customer,

Thank you for placing your trust in one of the products of Galletti S.p.a

This product is the result of our work and our commitment to design, research, and production and has been made from the finest materials, employing state-of-the-art components and production technology.

The CE marking of the product ensures its compliance with the safety requirements of the following directives: the Machinery Directive, the Electromagnetic Compatibility Directive, the Electrical Safety Directive, and the Pressure Equipment Directive. Fulfillment of the Ecodesign requirements is fully in keeping with the environmental awareness that has always guided our company.

The company certification of the Quality and Safety management system ensures that product quality is constantly checked and improved, and that the product is manufactured in full compliance with the highest standards.

By choosing our product, you have opted for Quality, Reliability, Safety, and Sustainability.

At your disposal, once again.

Galletti S.p.a

#### **TRANSLATION BY ORIGINAL INSTRUCTIONS**

The water chillers and heat pumps comply with directive 2014/68/EC (PED).

*The technical and dimensional data reported in this manual may be modified in view of any product improvement.*

*For any information , please contact the company: [info@galletti.it](mailto:info@galletti.it)*

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# 1 SERIES

WLE series water chillers and water-cooled monobloc reversible heat pumps are designed for heating or cooling water for residential and commercial air-conditioning systems as well as industrial process applications.

The series consists of 25 models with cooling capacities ranging from 42 to 750 kW, available in cooling only or reversible heat pump versions.

**The units can be installed in technical compartments in compliance with UNI EN 378-3 as in outdoor. In this last case is mandatory to select the configuration option "outdoor installation".**

**⚠ WARNING:** Always install the unit in well-ventilated technical compartments and in compliance with the safety

requirements specified in UNI EN 378-3.

**⚠ WARNING:** The design of machinery room are on responsibility of the installer.

**⚠ WARNING:** Do not install the unit in environments with gas or flammable dusts.(ATEX zone)

## 1.1 BEYOND CONVENTIONAL EFFICIENCY LIMITS

Combining the compressors using IDV technology with high-efficiency heat exchangers allows the WLE range to exceed the seasonal efficiency limits set by the ErP 2021 ecodesign directive.

# 2 CONSTRUCTIVE FEATURES

## 2.1 STRUCTURE

Galvanised steel sheet structure treated with a polyester powder coating suitable for indoor applications.

On request the unit can be supplied complete with easily removable containment panels to greatly simplify all maintenance and inspection operations.

## 2.2 COOLING CIRCUIT

- Scroll type compressors in a tandem or trio configuration that can be sound insulated. The adopted components' efficiency, reliability, and noise emission levels represent the state of the art for scroll compressors.
- Brazed plate heat exchangers made of stainless steel and optimised for use with R454B.
- Dehydrating filter.
- Flow indicator with humidity indicator.
- Electronic expansion valve with integrated sight glass.
- Cycle reversing valve (only WLE H)
- Check valve (WLE H)
- High and low pressure switch
- Schrader valves for checks and/or maintenance

On some models, depending on the type of compressor used, the following may be present:

- Relief valve for limiting the pressure of the high pressure circuit in compliance with UNI EN 378-2, suitable for ducting.

## 2.3 ELECTRONIC MICROPROCESSOR CONTROL

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

Main functions:

- Control of water returning from the system's temperature
- With modulating pump, control of the flow temperature to the unit or the Delta T
- Management of a signal to control a flow reverse valve on the equipment side. This makes it possible to reverse the water-side cycle for cooling-only versions, that is, to adjust the temperature at the evaporator or condenser inlet depending on the operating mode and to provide an external signal

for reversing the system-side valves that connect the equipment to the unit's heat exchanger. For models with heat pump operation, this allows the water inlet and outlet to be reversed on an external hydraulic circuit breaker in order to improve stratification.

- Possibility of adapting the set-point to the outside load conditions or to the outside temperature
  - Control of the electronic valve
  - Complete alarm management, including history
  - An RS485 serial port is available for monitoring
  - Possibility of connecting a second remote terminal (display)
  - On request, possibility of monitoring the COP in real time
  - Management of multiple units connected to a LAN network
- Devices controlled
- Compressor
  - Reverse cycle valve (WLE H)
  - Alarm signalling relay
  - LAN networks for controlling 6 units in parallel and managing BACNET and LON communication protocols
  - Management of the external pumping unit and, as an option, management of the splitting of the water flow both on the source side and on the equipment side.

## 3 CONFIGURATION OPTIONS

The WLE series consists of 25 models with different capacities, in cooling only version or reversible heat pump. All models operates with R454B refrigerant.

» Configuration options

<b>1</b>	<b>Power supply</b>
0	400/3/50 + N
1	400/3/50
2	400/3/50 + N + Circuit breakers
3	400/3/50 + circuit breakers
<b>2</b>	<b>Control microprocessor and lamination device</b>
B	Advanced + electronic expansion valve
<b>3</b>	<b>Partial heat recovery</b>
0	Absent
D	Desuperheater (partial heat recovery)
<b>4</b>	<b>Management of source side pumps</b>
1	Single pump
2	Dual pump
3	Single pump + condensation control with 0-10V modulated output signal
4	Dual pump + condensation control with 0-10V modulated output signal
<b>5</b>	<b>User water flow modulation</b>
1	Single pump
2	Dual pump
3	Single pump + output signal with water flow modulation in $\Delta T$ logic = cost
4	Dual pump + output signal with water flow modulation in $\Delta T$ logic = cost
5	Single pump + output signal with water flow modulation in T logic = cost
6	Dual pump + output signal with water flow modulation in T logic = cost
<b>6</b>	<b>Remote communication</b>
0	Absent
1	RS485 serial card (Modbus or Carel protocol)
2	Lonworks serial card
4	Ethernet card (SNMP or BACNET protocol) + clock card
5	Ethernet card + clock card + monitoring software
<b>7</b>	<b>Anti vibration shock mounts</b>
0	Absent
G	Rubber vibration dampers at the base of the unit
M	Spring vibration dampers at the base of the unit
<b>8</b>	<b>Packing</b>
0	Standard
1	Wooden cage
2	Wooden crate
<b>9</b>	<b>Remote control</b>
0	Absent
1	Simplified remote control panel
3	Remote display for programmable microprocessor
<b>10</b>	<b>Anti-intrusion panelling</b>
0	Absent
P	Present (standard for Q version and mandatory for field 11 = 1)
<b>11</b>	<b>Unit installation</b>
0	Indoor
1	Outdoor

**NOTE:** The choice of some options can make the choice of some others forbidden or make some selection (fields) mandatory. Please contact Galletti S.p.A. for verification.

<b>A</b>	Power factor capacitors
<b>B</b>	Soft starter
<b>C</b>	Service kit (advanced controller required)

<b>D</b>	User side water flow reversal valve management
<b>E</b>	ON/OFF status of the compressors
<b>F</b>	Remote control for step capacity limit (advanced controller required)
<b>G</b>	Configurable digital alarm board (advanced controller required)
<b>I</b>	Two pairs of Victaulic joints
<b>L</b>	Filter regulating kit
<b>M</b>	Set point compensation outdoor temperature probe
<b>N</b>	Compressor tandem/trio isolation valves
<b>P</b>	Unit lifting pipes
<b>Q</b>	Temperature probe for pump shutdown on the primary circuit
<b>T</b>	Mains power analyzer for monitoring and reducing power consumption
<b>V</b>	Set-point modification with 4-20mA signal

## 4 TECHNICAL FEATURES

### 4.1 WLE C WATER CHILLERS RATED TECHNICAL DATA

WLE			052	062	072	082	092	122	132
Cooling capacity	(1)(E)	kW	45,3	57,9	66,3	76,8	85,7	116	131
Total power input	(1)(E)	kW	10,5	13,5	15,2	17,7	19,8	26,3	29,9
EER	(1)(E)		4,30	4,27	4,36	4,35	4,32	4,39	4,37
SEER	(2)(E)		5,72	5,98	6,02	5,78	5,95	5,81	5,80
Water flow user side	(1)	l/h	7796	9977	11418	13231	14763	19893	22476
Water pressure drop user side	(1)(E)	kPa	31	49	45	45	43	45	35
Water flow source side	(1)	l/h	9518	12143	13864	16074	17969	24151	27369
Water pressure drop source side	(1)(E)	kPa	48	75	68	67	65	66	53
Maximum current absorption		A	29,0	36,0	42,0	49,0	57,0	72,0	81,0
Start up current		A	112	161	211	218	178	288	296
Startup current with soft starter		A	67	97	127	131	107	173	178
Compressors / circuits						2/1			
Refrigerant charge - circuit 1	(3)	kg	4,4	4,4	5,4	5,5	6,9	8,4	11,3
Refrigerant charge - circuit 2	(4)	kg				-			
Sound power level	(5)(E)	dB(A)	73	75	76	77	80	80	82
Sound pressure level	(6)	dB(A)	45	47	48	49	52	52	54
Sound power level, low-noise version	(5)(E)	dB(A)	67	69	70	71	74	74	76
Sound power level quiet version	(5)(E)	dB(A)	61	63	64	65	68	68	70
Height		mm	975	975	975	975	975	1900	1900
Depth		mm	948	948	948	948	948	948	948
Length		mm	1640	1640	1640	1640	1640	1648	1648
Weight without options		kg	310	328	343	361	408	560	619

WLE			152	154	182	184	212	214	242
Cooling capacity	(1)(E)	kW	161	144	177	177	208	203	235
Total power input	(1)(E)	kW	37,2	33,2	39,5	40,6	46,7	46,5	51,8
EER	(1)(E)		4,33	4,34	4,47	4,36	4,46	4,38	4,54
SEER	(2)(E)		6,06	5,54	6,09	6,48	5,84	6,11	5,78
Water flow user side	(1)	l/h	27732	24792	30369	30429	35841	34985	40465
Water pressure drop user side	(1)(E)	kPa	51	24	29	35	39	38	49
Water flow source side	(1)	l/h	33758	30291	36888	37093	43502	42614	48918
Water pressure drop source side	(1)(E)	kPa	78	37	44	53	60	57	74
Maximum current absorption		A	91,0	90,0	112	114	130	128	151
Start up current		A	356	224	380	293	399	307	420
Startup current with soft starter		A	214	153	228	199	239	210	252
Compressors / circuits			2/1	4/2	2/1	4/2	2/1	4/2	2/1
Refrigerant charge - circuit 1	(3)	kg	11,3	7,7	15,1	7,8	16,8	9,2	18,6
Refrigerant charge - circuit 2	(4)	kg	-	7,7	-	7,8	-	9,2	-
Sound power level	(5)(E)	dB(A)	87	79	87	83	89	83	89
Sound pressure level	(6)	dB(A)	59	59	61	61	51	55	55
Sound power level, low-noise version	(5)(E)	dB(A)	81	73	83	77	84	77	85
Sound power level quiet version	(5)(E)	dB(A)	75	67	77	71	78	71	79
Height		mm	1900	1900	1900	1900	1900	1900	1900
Depth		mm	948	948	948	948	948	948	948
Length		mm	1648	2140	1648	2140	1648	2140	1648
Weight without options		kg	688	997	727	932	799	973	869

(1) Water temperature - user side 12°C / 7°C, water temperature - dissipation side 30°C / 35°C (EN14511:2018)

(2)  $\eta$  efficiency values for heating and cooling are respectively calculated by the following formulas:  $[\eta = SCOP / 2,5 - F(1) - F(2)]$  e  $[\eta = SEER / 2,5 - F(1) - F(2)]$ . For further information, please refer to the technical document "ErP 2009/125/EC DIRECTIVE" in the catalogue introducing pages, or to the EN14825:2017 regulation.

(3) If the two cooling circuits are unbalanced, it is the smaller circuit. Kg gas value is estimated. For the exact value refer to the plate data on the unit.

(4) If the two cooling circuits are unbalanced, it is the larger circuit. Kg gas value is estimated. For the exact value refer to the plate data on the unit.

(5) Sound power level measured according to ISO 9614

(6) Sound pressure measured at a distance of 10 m in a free field with a directivity factor of 2

(E) EUROVENT certified data

WLE			244	274	314	364	384	454	504
Cooling capacity	(1)(E)	kW	231	262	296	349	376	419	478
Total power input	(1)(E)	kW	51,9	58,8	66,6	76,6	81,9	89,3	99,2
EER	(1)(E)		4,45	4,46	4,44	4,56	4,59	4,69	4,81
SEER	(2)(E)		6,14	6,08	6,40	6,38	6,11	6,71	6,77
Water flow user side	(1)	l/h	39728	45112	50884	59992	64563	72043	82068
Water pressure drop user side	(1)(E)	kPa	42	43	41	44	44	25	31
Water flow source side	(1)	l/h	48233	54764	61834	72580	78025	86936	98537
Water pressure drop source side	(1)(E)	kPa	61	64	63	66	66	43	53
Maximum current absorption		A	144	161	182	224	240	261	303
Start up current		A	360	377	447	492	508	529	571
Startup current with soft starter		A	244	259	305	340	353	369	403
Compressors / circuits						4/2			
Refrigerant charge - circuit 1	(3)	kg	9,3	11	14,7	14,8	15,6	25,2	27,5
Refrigerant charge - circuit 2	(4)	kg	9,3	11	14,7	14,8	15,6	25,2	27,5
Sound power level	(5)(E)	dB(A)	83	85	90	90	90	92	92
Sound pressure level	(6)	dB(A)	55	57	62	62	62	64	64
Sound power level, low-noise version	(5)(E)	dB(A)	77	79	84	86	86	87	88
Sound power level quiet version	(5)(E)	dB(A)	71	73	78	80	80	81	82
Height		mm	1900	1900	1900	1900	1900	1900	1900
Depth		mm	948	948	948	948	948	948	948
Length		mm	2140	2140	2930	2930	2930	2930	2930
Weight without options		kg	992	1101	1393	1491	1523	1925	1968

WLE			606	636	696	746
Cooling capacity	(1)(E)	kW	557	612	664	720
Total power input	(1)(E)	kW	120	134	144	151
EER	(1)(E)		4,66	4,56	4,60	4,76
SEER	(2)(E)		6,69	6,73	6,72	6,80
Water flow user side	(1)	l/h	95729	105158	114046	123665
Water pressure drop user side	(1)(E)	kPa	38	43	52	60
Water flow source side	(1)	l/h	115496	127315	137734	148470
Water pressure drop source side	(1)(E)	kPa	63	62	71	70
Maximum current absorption		A	328	370	412	454
Start up current		A	593	638	680	722
Startup current with soft starter		A	421	457	491	524
Compressors / circuits					6/2	
Refrigerant charge - circuit 1	(3)	kg	30,8	30,8	33,3	33,5
Refrigerant charge - circuit 2	(4)	kg	30,8	30,8	33,3	33,5
Sound power level	(5)(E)	dB(A)	94	94	94	94
Sound pressure level	(6)	dB(A)	66	66	66	66
Sound power level, low-noise version	(5)(E)	dB(A)	88	89	89	90
Sound power level quiet version	(5)(E)	dB(A)	82	83	83	84
Height		mm	2300	2300	2300	2300
Depth		mm	1168	1168	1168	1168
Length		mm	3330	3330	3330	3330
Weight without options		kg	2592	2689	2648	2752

- (1) Water temperature - user side 12°C / 7°C, water temperature - dissipation side 30°C / 35°C (EN14511:2018)
- (2)  $\eta$  efficiency values for heating and cooling are respectively calculated by the following formulas:  $[\eta = SCOP / 2,5 - F(1) - F(2)]$  e  $[\eta = SEER / 2,5 - F(1) - F(2)]$ . For further information, please refer to the technical document "ErP 2009/125/EC DIRECTIVE" in the catalogue introducing pages, or to the EN14825:2017 regulation.
- (3) If the two cooling circuits are unbalanced, it is the smaller circuit. Kg gas value is estimated. For the exact value refer to the plate data on the unit.
- (4) If the two cooling circuits are unbalanced, it is the larger circuit. Kg gas value is estimated. For the exact value refer to the plate data on the unit.
- (5) Sound power level measured according to ISO 9614
- (6) Sound pressure measured at a distance of 10 m in a free field with a directivity factor of 2
- (E) EUROVENT certified data

## 4.2 HEAT PUMPS RATED TECHNICAL DATA WLE H

WLE			052	062	072	082	092	122	132
Power supply		V-ph-Hz	400/3N/50						
Cooling capacity	(1)(E)	kW	44,9	55,6	65,4	76,4	85,7	114	130
Total power input	(1)(E)	kW	11,6	13,9	16,1	18,9	20,6	28,3	32,0
EER	(1)(E)		3,87	4,00	4,06	4,04	4,16	4,04	4,07
SEER	(2)(E)		5,64	5,89	5,93	5,69	5,86	5,72	5,71
Water flow user side	(1)	l/h	7733	9570	11263	13152	14752	19655	22430
Water pressure drop user side	(1)(E)	kPa	31	45	44	44	43	44	35
Water flow source side	(1)	l/h	9628	11798	13857	16198	18082	24237	27671
Water pressure drop source side	(1)(E)	kPa	49	71	68	68	66	67	54
Heating capacity	(3)(E)	kW	52,0	66,0	78,0	91,0	100	135	153
Total power input	(3)(E)	kW	14,1	17,6	20,2	22,5	24,9	34,1	38,7
COP	(3)(E)		3,70	3,77	3,85	4,03	4,00	3,96	3,95
Heating energy efficiency class	(4)		A+++						
SCOP	(2)(E)		5,41	5,49	5,52	5,45	5,23	5,48	5,52
Water flow user side	(3)	l/h	9048	11481	13451	15697	17258	23403	26532
Water pressure drop user side	(3)(E)	kPa	44	68	64	65	60	63	50
Water flow source side	(3)	l/h	11247	14471	17045	20155	22073	29829	33678
Water pressure drop source side	(3)(E)	kPa	61	95	93	96	88	93	72
Maximum current absorption		A	29,0	36,0	42,0	49,0	57,0	72,0	81,0
Start up current		A	112	161	211	218	178	288	296
Startup current with soft starter		A	67	97	127	131	107	173	178
Compressors / circuits			2/1						
Refrigerant charge - circuit 1	(5)	kg	4,4	4,4	5,4	5,5	6,9	8,4	11,3
Refrigerant charge - circuit 2	(6)	kg	-						
Sound power level	(7)(E)	dB(A)	73	75	76	77	80	80	82
Sound pressure level	(8)	dB(A)	45	47	48	49	52	52	54
Sound power level, low-noise version	(7)(E)	dB(A)	67	69	70	71	74	74	76
Sound power level quiet version	(7)(E)	dB(A)	61	63	64	65	68	68	70
Height		mm	975	975	975	975	975	1900	1900
Length		mm	1640	1640	1640	1640	1640	1648	1648
Depth		mm	948	948	948	948	948	948	948
Weight without options		kg	315	334	353	371	418	572	635

- (1) Water temperature - user side 12°C / 7°C, water temperature - dissipation side 30°C / 35°C (EN14511:2018)  
(2)  $\eta$  efficiency values for heating and cooling are respectively calculated by the following formulas: [ $\eta = SCOP / 2,5 - F(1) - F(2)$ ] e [ $\eta = SEER / 2,5 - F(1) - F(2)$ ]. For further information, please refer to the technical document "ErP 2009/125/EC DIRECTIVE" in the catalogue introducing pages, or to the EN14825:2017 regulation.  
(3) Water temperature - user side 40°C / 45°C, water temperature - source side 10°C / 7°C (EN14511:2018)  
(4) Seasonal energy efficiency class for LOW TEMPERATURE room heating under AVERAGE climatic conditions [EUROPEAN REGULATION No 811/2013]  
(5) If the two cooling circuits are unbalanced, it is the smaller circuit. Kg gas value is estimated. For the exact value refer to the plate data on the unit.  
(6) If the two cooling circuits are unbalanced, it is the larger circuit. Kg gas value is estimated. For the exact value refer to the plate data on the unit.  
(7) Sound power level measured according to ISO 9614  
(8) Sound pressure measured at a distance of 10 m in a free field with a directivity factor of 2  
(E) EUROVENT certified data



WLE			152	154	182	184	212	214	242
Power supply		V-ph-Hz	400/3N/50						
Cooling capacity	(1)(E)	kW	149	145	174	177	204	203	230
Total power input	(1)(E)	kW	37,0	36,3	42,4	43,7	49,1	51,2	54,4
EER	(1)(E)		4,02	4,00	4,11	4,05	4,16	3,96	4,23
SEER	(2)(E)		5,97	5,46	6,00	6,38	5,75	6,02	5,69
Water flow user side	(1)	l/h	25587	24972	29949	30431	35122	34845	39546
Water pressure drop user side	(1)(E)	kPa	44	25	28	35	38	37	47
Water flow source side	(1)	l/h	31604	30973	36938	37608	43180	43251	48433
Water pressure drop source side	(1)(E)	kPa	69	39	44	55	59	59	72
Heating capacity	(3)(E)	kW	173	169	203	207	245	238	269
Total power input	(3)(E)	kW	44,0	42,7	50,2	51,6	59,3	59,1	65,2
COP	(3)(E)		3,93	3,95	4,04	4,00	4,12	4,02	4,13
Heating energy efficiency class	(4)		A+++						
SCOP	(2)(E)		5,59	5,28	5,61	5,79	5,68	5,88	5,47
Water flow user side	(3)	l/h	30026	29241	35166	35854	42453	41240	46757
Water pressure drop user side	(3)(E)	kPa	63	35	41	50	57	54	68
Water flow source side	(3)	l/h	38117	36958	44800	45642	54595	52583	60304
Water pressure drop source side	(3)(E)	kPa	90	50	58	73	83	78	100
Maximum current absorption		A	91,0	90,0	112	114	130	128	151
Start up current		A	356	224	380	293	399	307	420
Startup current with soft starter		A	214	153	228	199	239	210	252
Compressors / circuits			2/1	4/2	2/1	4/2	2/1	4/2	2/1
Refrigerant charge - circuit 1	(5)	kg	11,3	7,7	15,1	7,8	16,8	9,2	18,6
Refrigerant charge - circuit 2	(6)	kg	-	7,7	-	7,8	-	9,2	-
Sound power level	(7)(E)	dB(A)	87	79	87	83	89	83	89
Sound pressure level	(8)	dB(A)	59	51	59	55	61	55	61
Sound power level, low-noise version	(7)(E)	dB(A)	81	73	83	77	84	77	85
Sound power level quiet version	(7)(E)	dB(A)	75	67	77	71	78	71	79
Height		mm	1900	1900	1900	1900	1900	1900	1900
Length		mm	1648	2140	1648	2140	1648	2140	1648
Depth		mm	948	948	948	948	948	948	948
Weight without options		kg	706	1014	746	948	820	991	893

- (1) Water temperature - user side 12°C / 7°C, water temperature - dissipation side 30°C / 35°C (EN14511:2018)
- (2)  $\eta$  efficiency values for heating and cooling are respectively calculated by the following formulas:  $[\eta = SCOP / 2,5 - F(1) - F(2)]$  e  $[\eta = SEER / 2,5 - F(1) - F(2)]$ . For further information, please refer to the technical document "ErP 2009/125/EC DIRECTIVE" in the catalogue introducing pages, or to the EN14825:2017 regulation.
- (3) Water temperature - user side 40°C / 45°C, water temperature - source side 10°C / 7°C (EN14511:2018)
- (4) Seasonal energy efficiency class for LOW TEMPERATURE room heating under AVERAGE climatic conditions [EUROPEAN REGULATION No 811/2013]
- (5) If the two cooling circuits are unbalanced, it is the smaller circuit. Kg gas value is estimated. For the exact value refer to the plate data on the unit.
- (6) If the two cooling circuits are unbalanced, it is the larger circuit. Kg gas value is estimated. For the exact value refer to the plate data on the unit.
- (7) Sound power level measured according to ISO 9614
- (8) Sound pressure measured at a distance of 10 m in a free field with a directivity factor of 2
- (E) EUROVENT certified data

WLE			244	274	314	364	384	454	504
Power supply		V-ph-Hz	400/3N/50						
Cooling capacity	(1)(E)	kW	229	261	296	349	376	420	474
Total power input	(1)(E)	kW	57,3	64,7	73,9	85,1	91,0	96,2	106
EER	(1)(E)		4,00	4,03	4,01	4,11	4,14	4,37	4,46
SEER	(2)(E)		6,05	5,99	6,31	6,29	6,02	6,61	6,67
Water flow user side	(1)	l/h	39448	44776	50946	60069	64702	72203	81499
Water pressure drop user side	(1)(E)	kPa	41	42	41	44	44	25	31
Water flow source side	(1)	l/h	48841	55392	63082	74035	79646	88222	99146
Water pressure drop source side	(1)(E)	kPa	63	65	66	68	68	44	54
Heating capacity	(3)(E)	kW	265	307	349	405	438	484	541
Total power input	(3)(E)	kW	66,2	75,8	85,5	99,1	107	116	128
COP	(3)(E)		4,01	4,04	4,08	4,09	4,11	4,16	4,22
Heating energy efficiency class	(4)		A+++						
SCOP	(2)(E)		5,85	5,82	5,91	5,85	5,74	6,11	6,06
Water flow user side	(3)	l/h	46051	53227	60587	70288	75962	83958	93908
Water pressure drop user side	(3)(E)	kPa	56	61	61	62	63	41	49
Water flow source side	(3)	l/h	58716	68084	77680	90152	97599	107671	121103
Water pressure drop source side	(3)(E)	kPa	84	90	88	91	93	52	63
Maximum current absorption		A	144	161	182	224	240	261	303
Start up current		A	360	377	447	492	508	529	571
Startup current with soft starter		A	244	259	305	340	353	369	403
Compressors / circuits			4/2						
Refrigerant charge - circuit 1	(5)	kg	9,3	11	14,7	14,8	15,6	25,2	27,5
Refrigerant charge - circuit 2	(6)	kg	9,3	11	14,7	14,8	15,6	25,2	27,5
Sound power level	(7)(E)	dB(A)	83	85	90	90	90	92	92
Sound pressure level	(8)	dB(A)	55	57	62	62	62	64	64
Sound power level, low-noise version	(7)(E)	dB(A)	77	79	84	86	86	87	88
Sound power level quiet version	(7)(E)	dB(A)	71	73	78	80	80	81	82
Height		mm	1900	1900	1900	1900	1900	1900	1900
Length		mm	2140	2140	2930	2930	2930	2930	2930
Depth		mm	948	948	948	948	948	948	948
Weight without options		kg	1012	1121	1425	1523	1555	1959	2008

(1) Water temperature - user side 12°C / 7°C, water temperature - dissipation side 30°C / 35°C (EN14511:2018)

(2)  $\eta$  efficiency values for heating and cooling are respectively calculated by the following formulas: [ $\eta = SCOP / 2,5 - F(1) - F(2)$ ] e [ $\eta = SEER / 2,5 - F(1) - F(2)$ ]. For further information, please refer to the technical document "ErP 2009/125/EC DIRECTIVE" in the catalogue introducing pages, or to the EN14825:2017 regulation.

(3) Water temperature - user side 40°C / 45°C, water temperature - source side 10°C / 7°C (EN14511:2018)

(4) Seasonal energy efficiency class for LOW TEMPERATURE room heating under AVERAGE climatic conditions [EUROPEAN REGULATION No 811/2013]

(5) If the two cooling circuits are unbalanced, it is the smaller circuit. Kg gas value is estimated. For the exact value refer to the plate data on the unit.

(6) If the two cooling circuits are unbalanced, it is the larger circuit. Kg gas value is estimated. For the exact value refer to the plate data on the unit.

(7) Sound power level measured according to ISO 9614

(8) Sound pressure measured at a distance of 10 m in a free field with a directivity factor of 2

(E) EUROVENT certified data

WLE			606	636	696	746
Power supply		V-ph-Hz	400/3N/50			
Cooling capacity	(1)(E)	kW	543	597	650	700
Total power input	(1)(E)	kW	129	141	151	167
EER	(1)(E)		4,20	4,24	4,29	4,19
SEER	(2)(E)		6,59	6,63	6,62	6,70
Water flow user side	(1)	l/h	93295	102590	111672	120233
Water pressure drop user side	(1)(E)	kPa	36	41	50	57
Water flow source side	(1)	l/h	114637	125788	136556	147523
Water pressure drop source side	(1)(E)	kPa	62	68	70	80
Heating capacity	(3)(E)	kW	632	695	765	825
Total power input	(3)(E)	kW	156	170	186	199
COP	(3)(E)		4,06	4,09	4,11	4,15
Heating energy efficiency class	(4)		A+++			
SCOP	(2)(E)		6,15	6,03	6,01	6,19
Water flow user side	(3)	l/h	109766	120603	132795	143252
Water pressure drop user side	(3)(E)	kPa	57	63	67	76
Water flow source side	(3)	l/h	140216	154510	170722	185132
Water pressure drop source side	(3)(E)	kPa	76	86	107	124
Maximum current absorption		A	328	370	412	454
Start up current		A	593	638	680	722
Startup current with soft starter		A	421	457	491	524
Compressors / circuits			6/2			
Refrigerant charge - circuit 1	(5)	kg	30,8	30,8	33,3	33,5
Refrigerant charge - circuit 2	(6)	kg	30,8	30,8	33,3	33,5
Sound power level	(7)(E)	dB(A)	94	94	94	94
Sound pressure level	(8)	dB(A)	66	66	66	66
Sound power level, low-noise version	(7)(E)	dB(A)	88	89	89	90
Sound power level quiet version	(7)(E)	dB(A)	82	83	83	84
Height		mm	2300	2300	2300	2300
Length		mm	3330	3330	3330	3330
Depth		mm	1168	1168	1168	1168
Weight without options		kg	2669	2775	2734	2838

- (1) Water temperature - user side 12°C / 7°C, water temperature - dissipation side 30°C / 35°C (EN14511:2018)  
(2)  $\eta$  efficiency values for heating and cooling are respectively calculated by the following formulas:  $[\eta = SCOP / 2,5 - F(1) - F(2)]$  e  $[\eta = SEER / 2,5 - F(1) - F(2)]$ . For further information, please refer to the technical document "ErP 2009/125/EC DIRECTIVE" in the catalogue introducing pages, or to the EN14825:2017 regulation.  
(3) Water temperature - user side 40°C / 45°C, water temperature - source side 10°C / 7°C (EN14511:2018)  
(4) Seasonal energy efficiency class for LOW TEMPERATURE room heating under AVERAGE climatic conditions [EUROPEAN REGULATION No 811/2013]  
(5) If the two cooling circuits are unbalanced, it is the smaller circuit. Kg gas value is estimated. For the exact value refer to the plate data on the unit.  
(6) If the two cooling circuits are unbalanced, it is the larger circuit. Kg gas value is estimated. For the exact value refer to the plate data on the unit.  
(7) Sound power level measured according to ISO 9614  
(8) Sound pressure measured at a distance of 10 m in a free field with a directivity factor of 2  
(E) EUROVENT certified data

## 5 PED CATEGORY

The water chillers and heat pumps comply with directive 2014/68/EC (PED).

Series	Size	Notified body	PED Category	Marking
WLE	F1	0476	III	CE + PED
	F2	0476	III	CE + PED
	F3	0476	III	CE + PED
	F4	0476	III	CE + PED
	F5	0476	III	CE + PED

## 6 PERFORMANCES

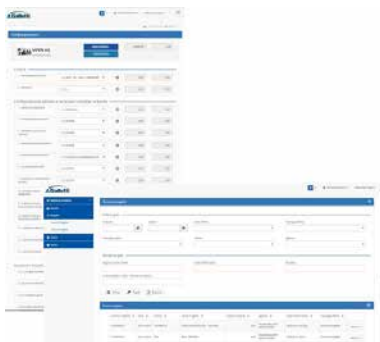
Galletti has developed on its [www.galletti.com](http://www.galletti.com) web-area the new ON-LINE integrated platform for product selection, configuration and the making of the economic offer.

The software, whose use is easy and intuitive, allows the identification of the desired products by calculating their performances based on real working conditions and their configuration helping the user in choosing options and accessories. It also allows to obtain a detailed report which includes performances, dimensional drawings, tender specifications and the economic offer.



### Product selection:

- Filters to make the identification of the requested product easier
- Performance calculation and saving of results
- Performance comparison between products belonging to different series



### Configuration and project history

- Wizard configuration of accessories and options for chillers, heat pumps and hydronic units
- Creation of a project which collects all products of interest
- Complete management of the stored history projects



### Report:

- Generation of a detailed list report in pdf format
- Choice of the sections to be included in the print:
  - Products performances
  - Dimensional drawings
  - Tender specifications

## 7 CALCULATION FACTORS

### 7.1 WATER AND GLYCOL MIXTURE

Based on the minimum outlet water temperature, you can derive the percentage of ethylene glycol and the corrective coefficient using the table below.

Percentage of ethylene glycol (%)	0%	10%	20%	30%	40%
Minimum temperature of water produced (°C)	5	2	-5	-10	-15
Mixture freezing temperature (°C)	0	-4	-14	-18	-24
Capacity correction factor	1	1,00	0,99	0,99	0,98
Water flow rate correction factor	1	1,05	1,09	1,14	1,20
Pressure drop correction factor	1	1,16	1,35	1,58	1,86

**⚠ WARNING** Always make sure that the external pumping unit is capable of withstanding the required percentage of glycol. If propylene glycol is used, please contact the manufacturer for more information.

## 8 SOUND LEVELS

Mod.	50 Hz (1)	63 Hz (1)	80 Hz (1)	100 Hz (1)	125 Hz (1)	160 Hz (1)	200 Hz (1)	250 Hz (1)	315 Hz (1)	400 Hz (1)	500 Hz (1)	630 Hz (1)	800 Hz (1)
	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB
WLE052CS	67,0	61,0	33	18	25,2	15	42	43,4	41	42	62,5	56	62
WLE062CS	69,0	63,0	35	20	27,2	17	44	45,4	43	44	64,5	58	64
WLE072CS	70,0	64,0	36	21	28,2	18	45	46,4	44	45	65,5	59	65
WLE092CS	74,0	68,0	40	25	32,2	22	49	50,4	48	49	69,5	63	69
WLE122CS	74,0	68,0	40	25	32,2	22	49	50,4	48	49	69,5	63	69
WLE132CS	76,0	70,0	42	27	34,2	24	51	52,4	50	51	71,5	65	71
WLE152CS	81,0	75,0	47	32	39,2	29	56	57,4	55	56	76,5	70	76
WLE154CS	73,0	67,0	47	32	39,2	29	56	57,4	55	56	76,5	70	76
WLE182CS	83,0	77,0	47	32	39,2	29	56	57,4	55	56	76,5	70	76
WLE184CS	77,0	71,0	49	34	41,2	31	58	59,4	57	58	78,5	72	78
WLE212CS	84,0	78,0	39	24	31,2	21	48	49,4	47	48	68,5	62	68
WLE214CS	77,0	71,0	43	28	35,2	25	52	53,4	51	52	72,5	66	72
WLE242CS	85,0	79,0	43	28	35,2	25	52	53,4	51	52	72,5	66	72
WLE244CS	77,0	71,0	43	28	35,2	25	52	53,4	51	52	72,5	66	72
WLE274CS	79,0	73,0	45	30	37,2	27	54	55,4	53	54	74,5	68	74
WLE314CS	84,0	78,0	50	35	42,2	32	59	60,4	58	59	79,5	73	79
WLE364CS	86,0	80,0	50	35	42,2	32	59	60,4	58	59	79,5	73	79
WLE384CS	86,0	80,0	50	35	42,2	32	59	60,4	58	59	79,5	73	79
WLE454CS	87,0	81,0	52	37	44,2	34	61	62,4	60	61	81,5	75	81
WLE504CS	88,0	82,0	52	37	44,2	34	61	62,4	60	61	81,5	75	81
WLE606CS	88,0	82,0	54	39	46,2	36	63	64,4	62	63	83,5	77	83
WLE636CS	89,0	83,0	54	39	46,2	36	63	64,4	62	63	83,5	77	83
WLE696CS	89,0	83,0	54	39	46,2	36	63	64,4	62	63	83,5	77	83
WLE746CS	90,0	84,0	54	39	46,2	36	63	64,4	62	63	83,5	77	83
WLE082CS	71,0	65,0	37	22	29,2	19	46	47,4	45	46	66,5	60	66

1. Sound power level by octave band, not weighted

Mod.	1000 Hz (1)	1250 Hz (1)	1600 Hz (1)	2000 Hz (1)	2500 Hz (1)	3000 Hz (1)	4000 Hz (1)	5000 Hz (1)	6000 Hz (1)	LwA (2)
	dB	dB	dB	dB	dB	dB	dB	dB	dB	dB(A)
WLE052CS	61,3	66	66	60,2	62	65	50,8	56	55	73
WLE062CS	63,3	68	68	62,2	64	67	52,8	58	57	75
WLE072CS	64,3	69	69	63,2	65	68	53,8	59	58	76
WLE092CS	68,3	73	73	67,2	69	72	57,8	63	62	80
WLE122CS	68,3	73	73	67,2	69	72	57,8	63	62	80
WLE132CS	70,3	75	75	69,2	71	74	59,8	65	64	82
WLE152CS	75,3	80	80	74,2	76	79	64,8	70	69	87
WLE154CS	75,3	80	80	74,2	76	79	64,8	70	69	79
WLE182CS	75,3	80	80	74,2	76	79	64,8	70	69	87
WLE184CS	77,3	82	82	76,2	78	81	66,8	72	71	83
WLE212CS	67,3	72	72	66,2	68	71	56,8	62	61	89
WLE214CS	71,3	76	76	70,2	72	75	60,8	66	65	83
WLE242CS	71,3	76	76	70,2	72	75	60,8	66	65	89
WLE244CS	71,3	76	76	70,2	72	75	60,8	66	65	83
WLE274CS	73,3	78	78	72,2	74	77	62,8	68	67	85
WLE314CS	78,3	83	83	77,2	79	82	67,8	73	72	90
WLE364CS	78,3	83	83	77,2	79	82	67,8	73	72	90
WLE384CS	78,3	83	83	77,2	79	82	67,8	73	72	90
WLE454CS	80,3	85	85	79,2	81	84	69,8	75	74	92
WLE504CS	80,3	85	85	79,2	81	84	69,8	75	74	92
WLE606CS	82,3	87	87	81,2	83	86	71,8	77	76	94
WLE636CS	82,3	87	87	81,2	83	86	71,8	77	76	94
WLE696CS	82,3	87	87	81,2	83	86	71,8	77	76	94
WLE746CS	82,3	87	87	81,2	83	86	71,8	77	76	94
WLE082CS	65,3	70	70	64,2	66	69	54,8	60	59	77

1. Sound power level by octave band, not weighted
2. Total sound power level, weighted A

## 8.1 ACOUSTIC INSULATION OPTIONS

OPTION	$\Delta L_w$ dB
Low-noise version (L): Compressor silencing housings	-6,0
Super low-noise version (Q): Compressor silencing housings + soundproofing panels	-12,0

## 9 OPERATING LIMITS

The following graphs illustrate the continuous operating limits of the WLE units in relation to the outlet water temperature of the unit and the water inlet temperature of the source. The following limits are to be considered valid for water temperature fluctuations of 5 K.

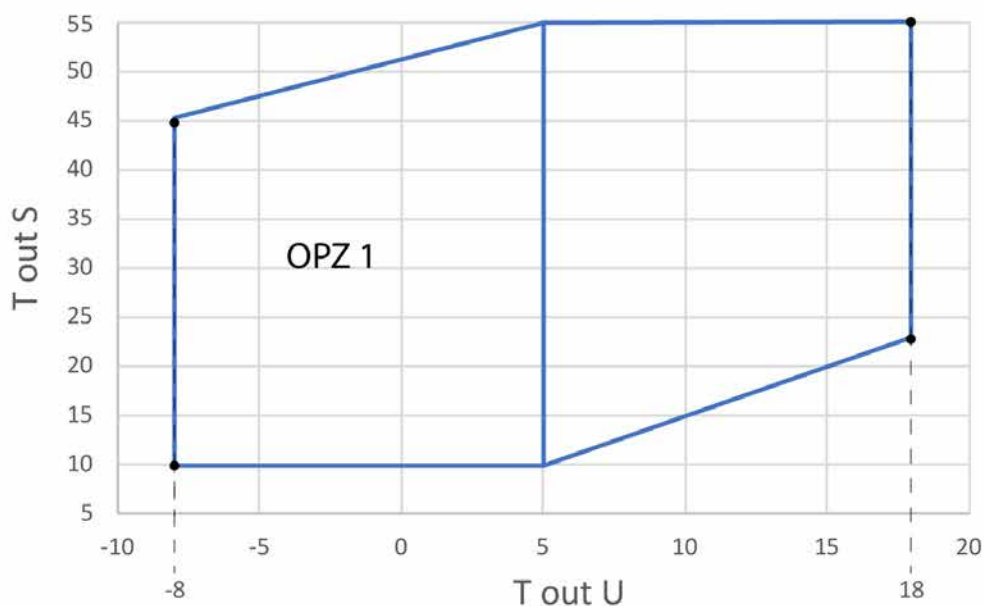
**⚠ WARNING:** contact the support area if you wish to operate with water temperature fluctuations other than 5 K at full load.

**⚠ WARNING:** except for special requests, which can be managed on request, the WLE series units set the number of compressors running according to the temperature of the water entering the unit (temperature returning from the system) and not according to the outlet temperature. Therefore, the settable set point always refers to the temperature of the water entering the unit. The outlet water temperature, to which the following operating limits refer, therefore depends on the set point/differential combination set on the return line, on the design thermal differential, and on any unit splitting conditions (refer to the controller's technical manual). Therefore, if you would like to operate continuously in the vicinity of the operating range, you should always make sure that the temperatures are in compliance with the operating limits, even under conditions of load regulation and splitting of the unit. If in doubt, contact the Galletti product support department.

**⚠ WARNING:** The units are designed to operate with water temperatures within the operating limits. Attempting to operate the units beyond these limits may cause irreparable damage to the units themselves.

### 9.1 OPERATION LIMITS WLE C

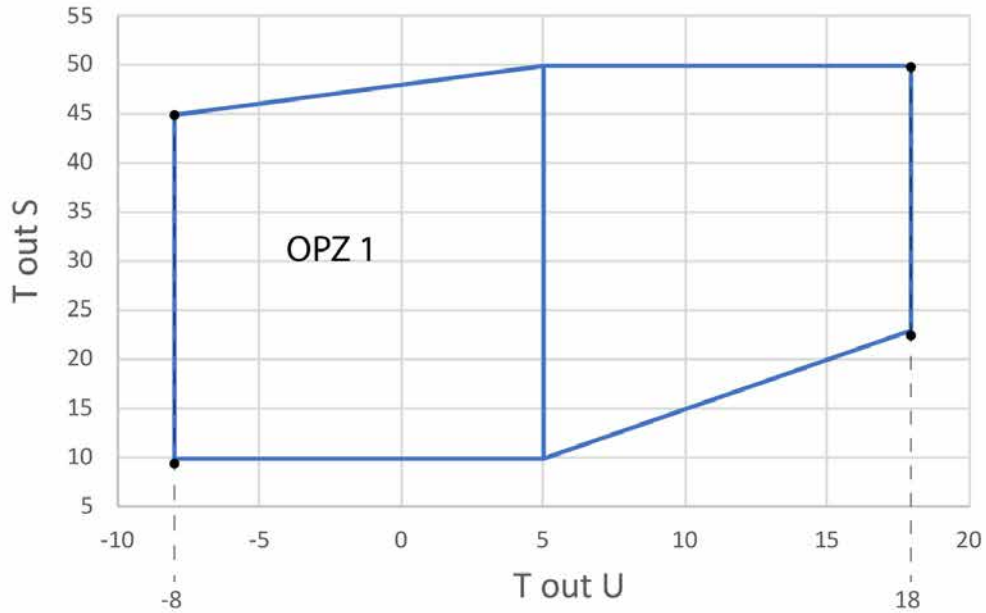
» WLE C operating range



**OPT 1** Glycol  
**T out U** Outlet water temperature (equipment)  
**T out S** Outlet water temperature (source)

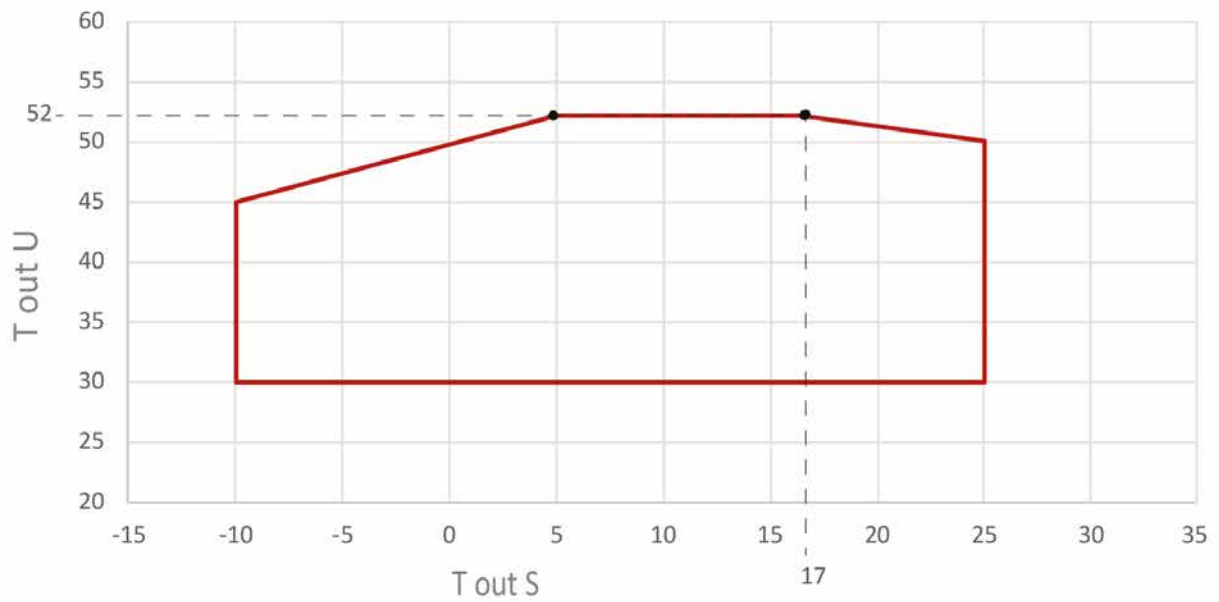
## 9.2 OPERATION LIMITS WLE H

» WLE H operating range - cooling mode



**OPT 1** Glycol  
**T out U** Outlet water temperature (user)  
**T out S** Outlet water temperature (source)

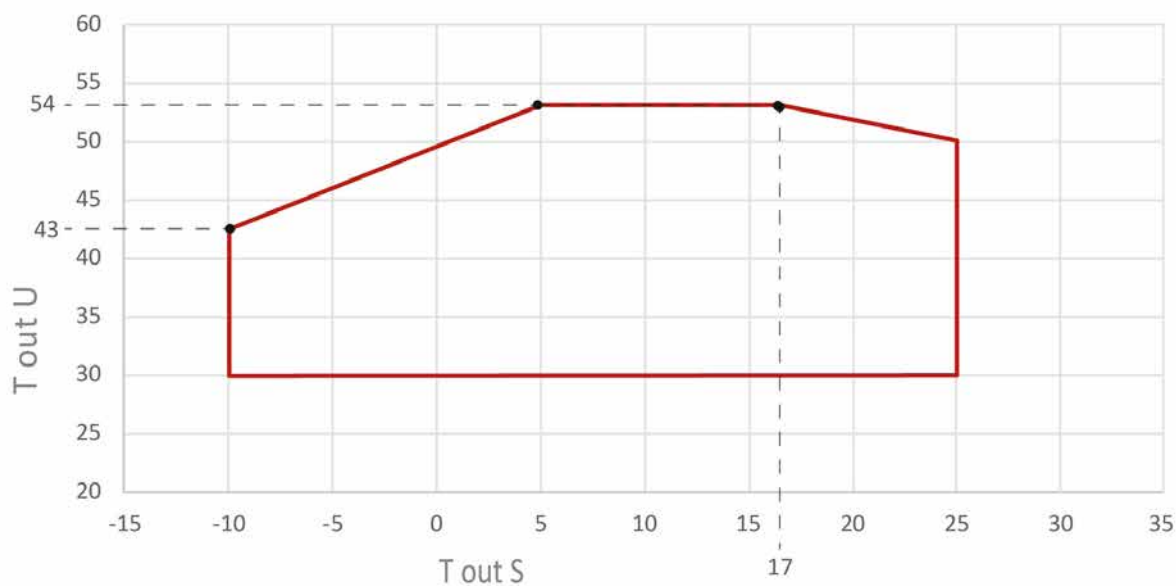
» WLE H - 052-072 operating range



**T out U** Outlet water temperature (user)  
**T out S** Outlet water temperature (source)

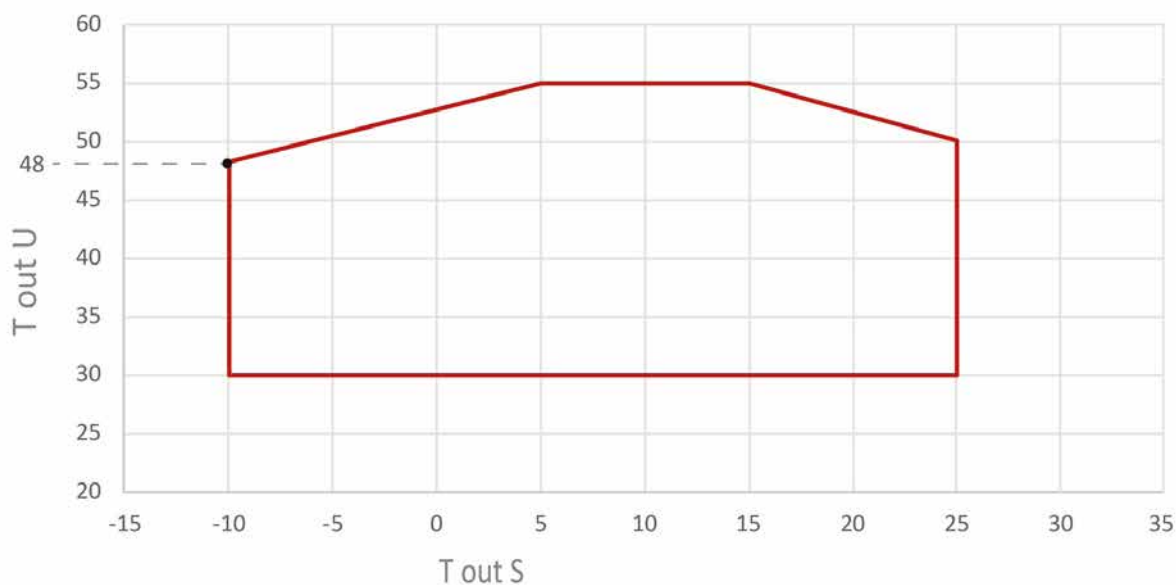


» WLE H 082-122 e 154-214 operating range



**T out U** Outlet water temperature (user)  
**T out S** Outlet water temperature (source)

» WLE H 244-746 operating range



**T out U** Outlet water temperature (user)  
**T out S** Outlet water temperature (source)

### 9.3 THERMAL CARRYING FLUID

The heat exchangers belonging to the WLE series can operate with mixtures of water and up to 35% ethylene glycol. Contact the manufacturer in case you want to use propylene glycol.

Make sure that the external pumping unit, if present, is capable of handling mixtures of water and ethylene glycol.

**⚠ WARNING:** always follow the instructions given in the Installation, use, and maintenance manual with regard to the heat transfer

fluid.

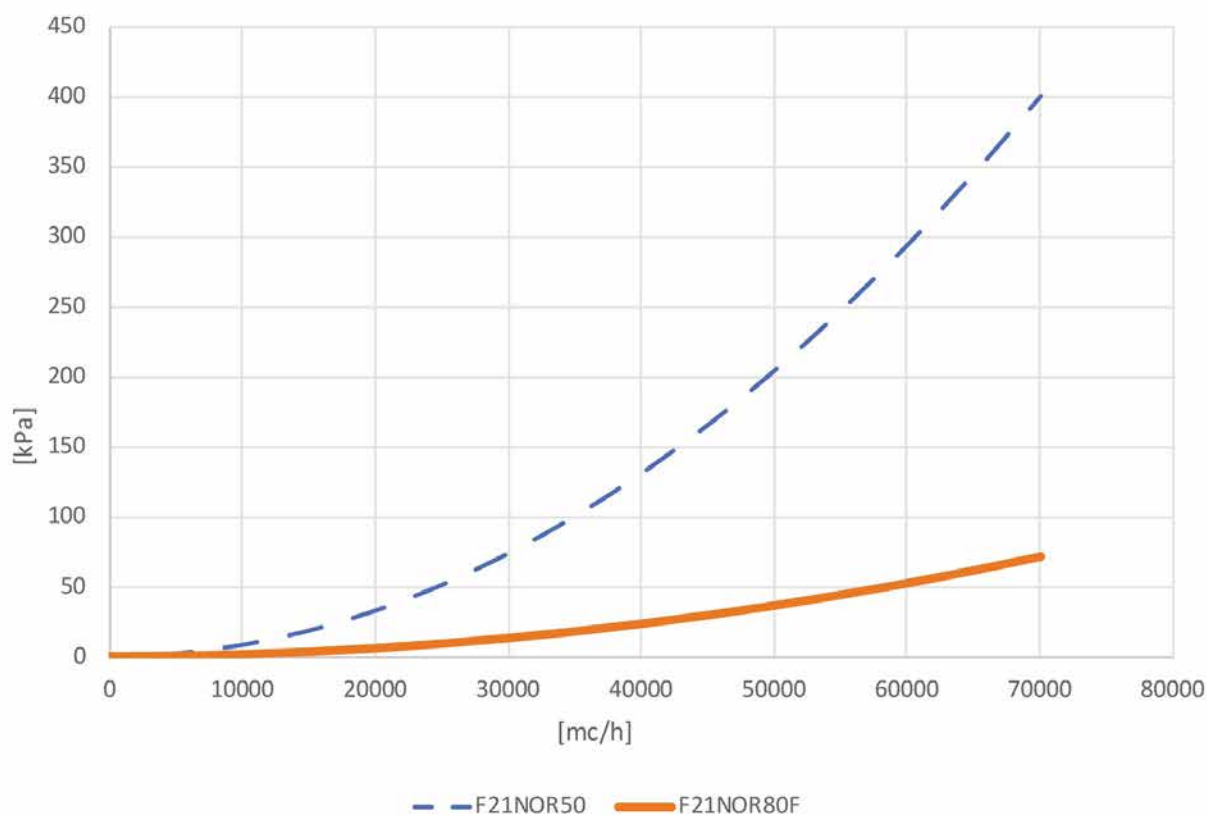
## 10 WATER PRESSURE DROP

### 10.1 Y FILTER PRESSURE DROPS

The table below shows the pressure drops of the Y filter ( $\Delta p$ ) as a function of the water flow rate ( $Q_w$ ), assuming an average water temperature of 10 °C,

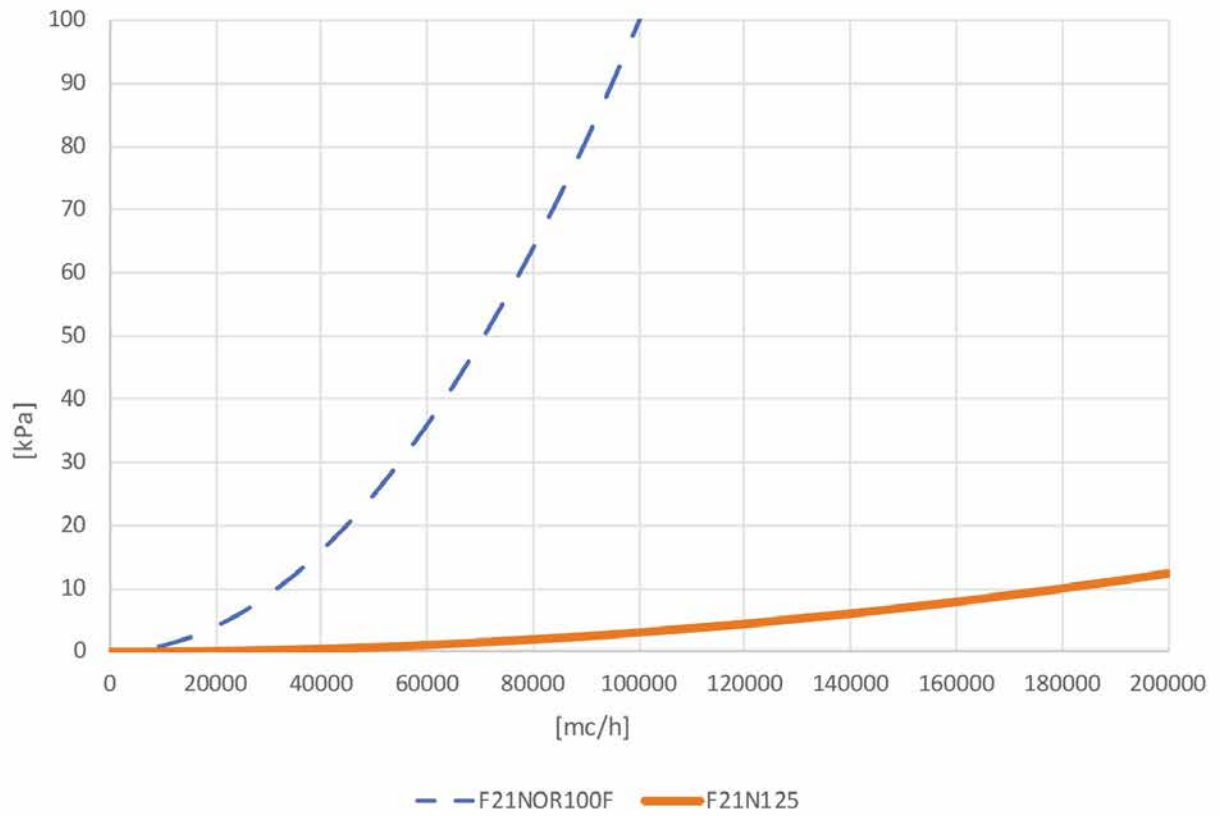
	F1	F2	F3	F4	F5
<b>Water connections</b>	2"	3"	3"	4"	5"
<b>Filter</b>	F21NOR50	F21NOR80F	F21NOR80F	F21NOR100F	F21N125
<b>Connections</b>	Threaded	Threaded	Threaded	Threaded	Flanged
<b>Material</b>	Brass	Brass	Brass	Brass	Cast Iron
<b>DN</b>	50	80	80	100	125
<b>Kvs</b>	35	83	83	100	567
<b>Filtering capacity [<math>\mu\text{m}</math>]</b>	500	800	800	800	1000
<b>Weight [kg]</b>	1,1	3,2	3,2	6,9	35

» Y Filter pressure drops Frame 1,2,3



kPa: Water pressure drop  
mc/h: Flow

» Y Filter pressure drops Frame 4,5



kPa: Water pressure drop  
mc/h: Flow

## 11 WATER CIRCUIT

When setting up the water circuit of the unit, it is advisable to follow the directions below and in any case comply with local or national regulations.

Connect the pipes to the chiller using flexible couplings to prevent the transmission of vibrations and to compensate thermal expansions.

Install the following components on the piping:

- Temperature and pressure indicators for routine maintenance and monitoring of the unit. Pressure control on the water side allows to assess the correct functioning of the expansion tank and to detect water leakage in advance.
- Traps on incoming and outgoing pipes for temperature measurements, which can provide a direct reading of the operating temperatures.
- Regulating valves (gate valves) for isolating the unit from the water circuit.
- **Metal mesh filter (supplied), with a mesh size no greater than 1 mm, to be fitted on the inlet pipe to protect the exchanger from scale or impurities present in the pipes.**
- Air vent valves, to be placed at the highest points of the water circuit for the purpose of bleeding air. (The internal pipes of the unit are fitted with small air vent valves for bleeding the unit itself: this operation may only be carried out when the unit is disconnected from the power supply).
- Drainage valve and, where necessary, a drainage tank for emptying out the equipment for maintenance purposes or when the unit is taken out of service at the end of the season. (A 1" drainage valve is provided on the optional water

buffer tank: this operation may only be carried out when the unit is disconnected from the power supply).

It is of fundamental importance that the incoming water supply is hooked up to the connection marked "Water Inlet".

Otherwise the evaporator would be exposed to the risk of freezing since the antifreeze thermostat would not be able to perform its function; moreover the reverse cycle would not be respected in the cooling mode, resulting in additional risks of malfunctioning.

The dimensions and position of plumbing connections are shown in the dimension tables 14 p. 27.

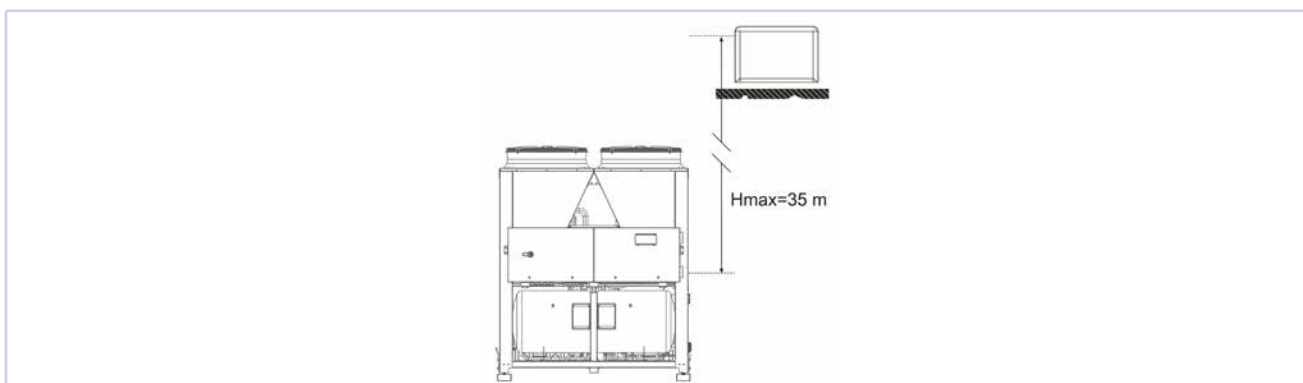
The water circuit must be set up in such a way as to guarantee that the nominal flow rate of the water supplied to the evaporator remains constant (+/- 15%) in all operating conditions.

A standard feature of WLE units is a device for controlling the flow rate (flow switch) in the water circuit in the immediate vicinity of the evaporator.

### 11.1 WATER CONTENT AND CHARGING OF EXPANZION TANK SYSTEM

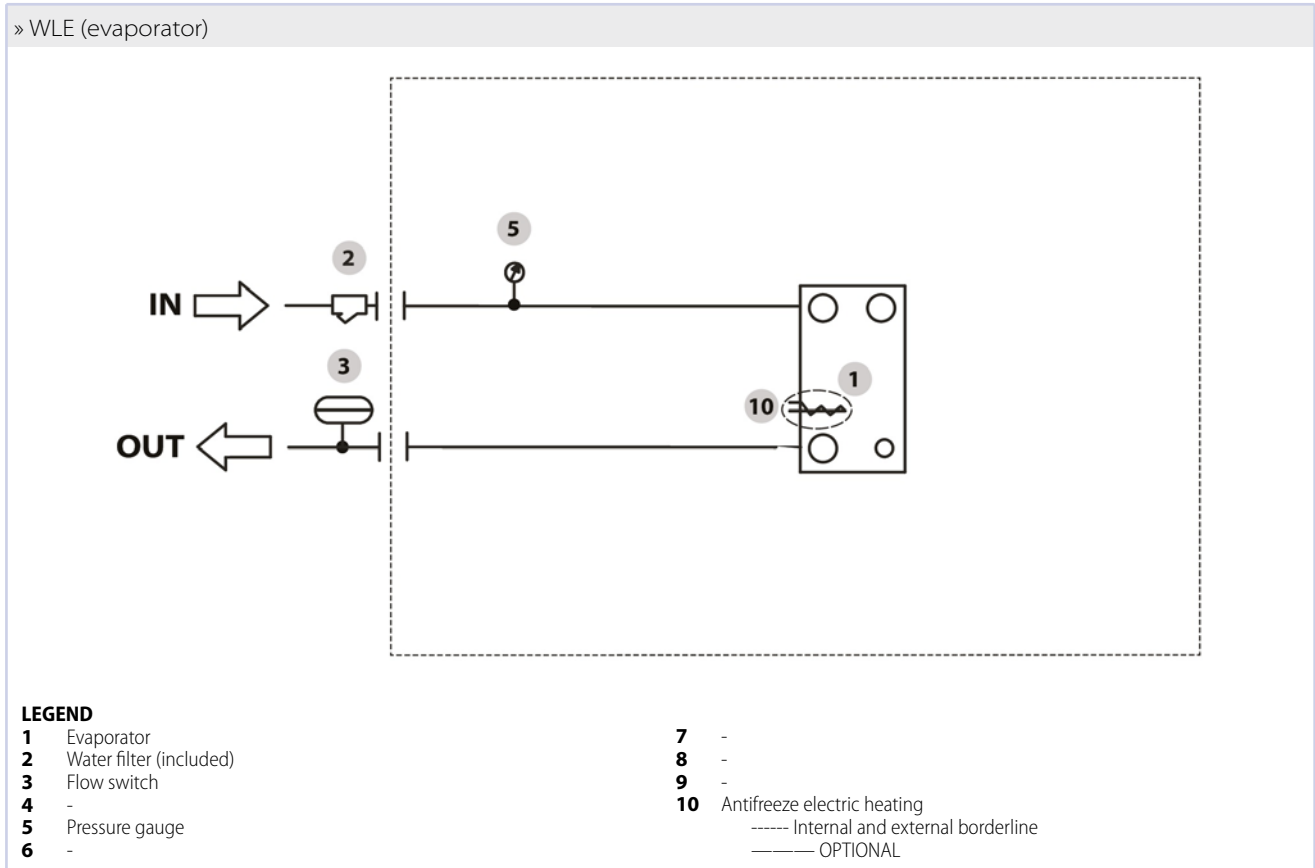
The expansion tank is pre-charged to a pressure of 1.5 bars, sufficient for systems with a maximum height difference (H in the figure at the side) of 13 metres.

For greater height differences, refer to the table below in order to adjust the charging pressure of the expansion tank accordingly. In no case should you exceed the maximum height difference  $H_{max} = 35$  m.



Height difference of system (m)	Charging pressure of expansion tank
<13	1,50
15	1,70
20	2,20
25	2,70
30	3,10

## 11.2 WATER CIRCUIT

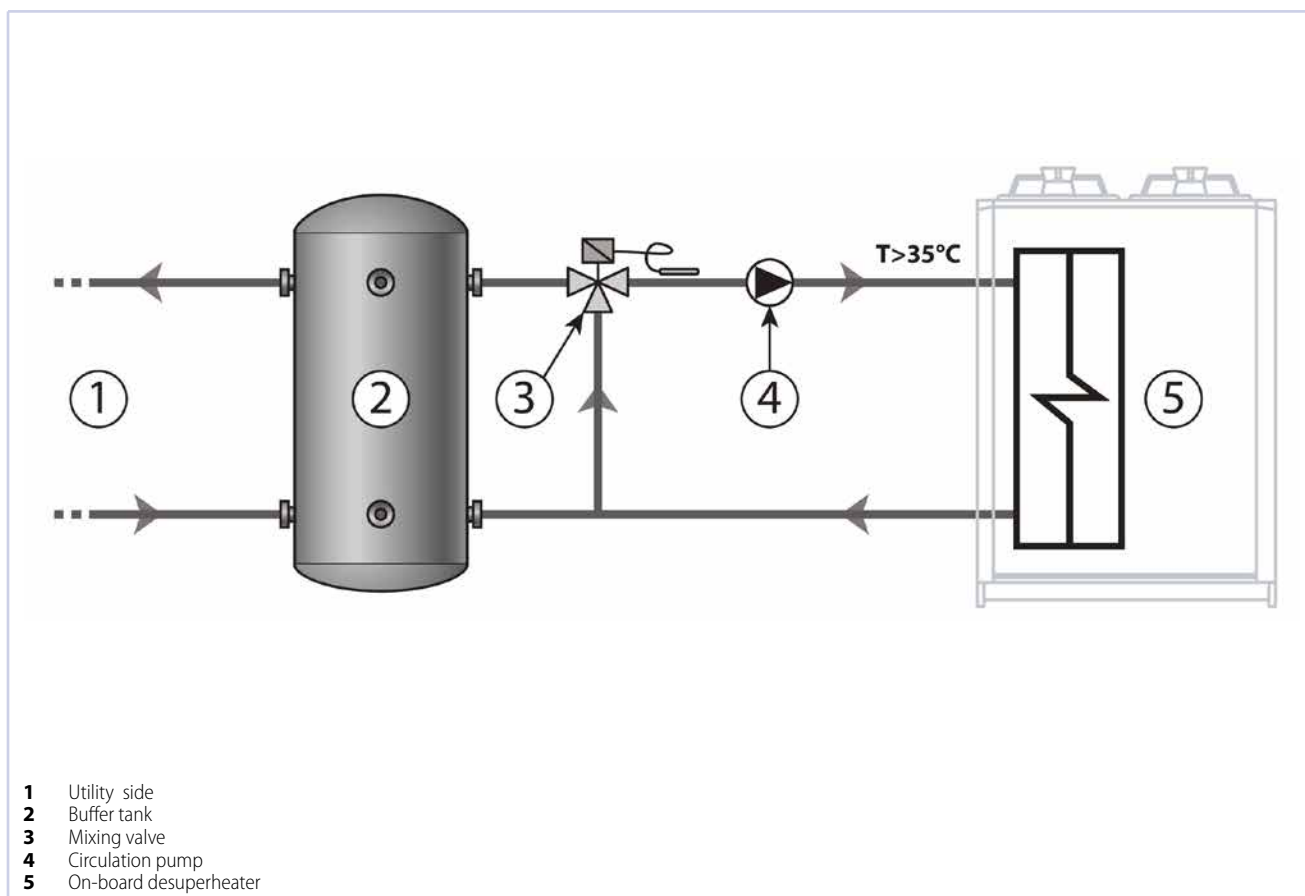


## 11.3 DE-SUPERHEATER

### 11.3.1 Recommended water circuit

The partial heat recovery option is provided by a braze-welded plate heat exchanger placed in series on the compressor delivery (typically in series in relation to the finned pack condenser). Its size is designed to limit pressure drops on the refrigerant side to a minimum.

All units equipped with a heat recovery kit have modulating condensation control as a standard feature. To prevent unbalances from occurring in the cooling circuit in the event of start-ups with very low water temperatures at the recuperator inlet (<35°C), the recovery system water circuit should be configured as shown in the following figure. A low recuperator inlet water temperature would cause low condensation temperatures and thus an insufficient pressure differential on the expansion valve with the consequent risk of tripping the safety devices.



The bulb of the 3-way mixer valve is placed at the de-superheater exchanger inlet. By mixing the hot water produced by the recovery with colder water from the tank, it reduces the time needed for the system to reach full operating capacity to a few moments.

A buffer tank must be placed between the unit and the utility since the demand for hot water and its availability are not simultaneous, because it needs the compressors to be running.

Note that the heat recovery capacity is tied to the delivered cooling capacity and therefore decreases proportionately in partial load situations: this aspect should be taken into account when choosing the size of the storage tank.

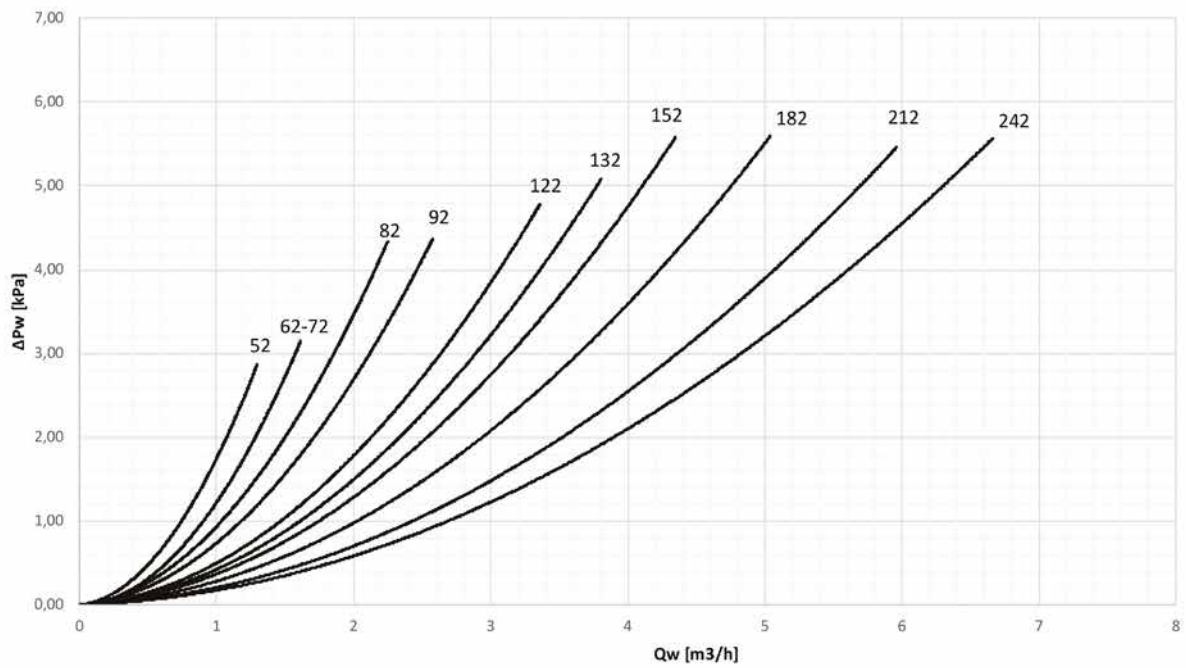
The partial heat recovery option is supplied only with the de-superheater exchanger. The other components of the circuit laid out in the previous figure are not included in the supply.

### 11.3.2 Water pressure drop

WLE	52	62	72	82	92	122	132	152	182	212	242
no. of cooling circuits	1	1	1	1	1	1	1	1	1	1	1
no. of desuperheaters	1	1	1	1	1	1	1	1	1	1	1
De-superheater type	CBH110	CBH110	CBH110	CBH110	CBH110	CBH110	CBH110	CBH110	CBH110	CBH110	CBH110

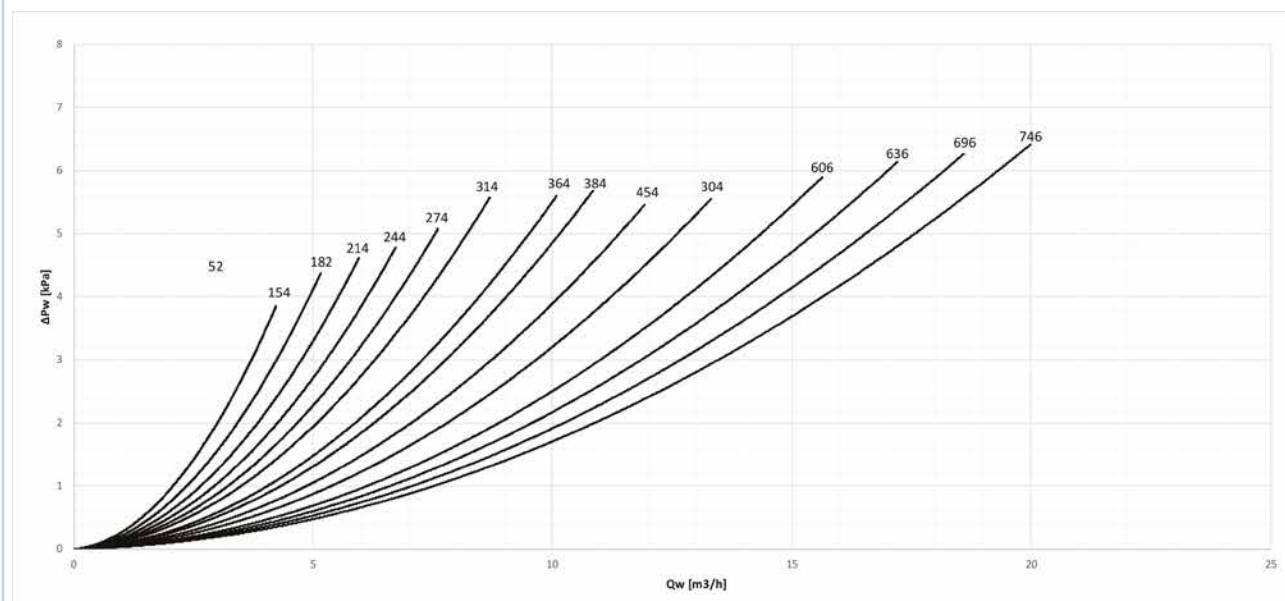
WLE	154	184	214	244	274	314	364	384	454	504	606	636	696	746
no. of cooling circuits	2	2	2	2	2	2	2	2	2	2	2	2	2	2
no. of desuperheaters	2	2	2	2	2	2	2	2	2	2	2	2	2	2
De-superheater type	CBH110	CBH110	CBH110	CBH110	CBH110	CBH110	CBH110	CBH110	CBH110	CBH110	CBH110	CBH110	CBH110	CBH110

» Single-circuit pressure drops





» Dual-circuit pressure drops



### 11.3.3 Heating capacities

» De-Superheater heating capacities

WLE			052	062	072	082	092	122	132	152	154	182	184	212	214
De-superheater heating capacity circuit 1	(1)	kW	7	9	11	13	14	19	21	24	28	33	37	12	14
De-superheater heating capacity circuit 2	(1)	kW	-	-	-	-	-	-	-	-	-	-	-	12	14
De-superheater water flow for circuit		l/h	1238	1569	1833	2163	2477	3220	3649	4161	4822	5713	6374	2031	2477

(1) De-superheater water temperature 40/45 °C, source side water temperature 12 / 7°C

WLE			242	244	274	314	364	384	454	504	606	636	696	746
De-superheater heating capacity circuit 1	(1)	kW	17	19	21	24	28	30	33	37	44	48	52	56
De-superheater heating capacity circuit 2	(1)	kW	17	19	21	24	28	30	33	37	44	48	52	56
De-superheater water flow for circuit		l/h	2857	3220	3649	4161	4822	5185	5713	6374	7563	8240	8900	9577

(1) De-superheater water temperature 40/45 °C, source side water temperature 12 / 7°C

**NOTE:** During heating mode with desuperheater switched on, desuperheater capacity must be subtracted to heating capacity of the unit

### 11.3.4 Heating capacities corrective factors

» De-Superheater heating capacities corrective factors

	Inlet water T / outlet water T °C		
	45/50	50/55	55/60
corr.f. Pdes	0,63	0,62	0,60
corr.f. Δp (water side)	0,41	0,40	0,37
corr.f. Water flow	0,63	0,62	0,60

## 12 INSTALLATION CLEARANCE REQUIREMENTS

During handling it is compulsory to check dimensions, weights, centre of gravity and anchorages. Check as well that lifting and positioning devices conform to the current safety regulations. The unit leaves the factory screwed onto a wooden pallet, which allows it to be easily conveyed with a forklift truck. After removing the unit from the pallet, handle it gently, without applying excessive pressure on the side panels. You should collect and separate the packing materials (wood, cardboard, nylon etc.) and make them available for recycling in order to minimise their environmental impact. Before lifting, remove the screws fastening the base of the unit to the wood platform.

While the unit is being unloaded and positioned, utmost care must be taken to avoid abrupt or violent manoeuvres. Be very careful when transporting it inside rooms. Do not use the unit components as anchors.

The unit should be lifted using  $\varnothing 1\frac{1}{2}$ " GAS steel pipes at least 3mm thick inserted through the holes provided on the base side

members and identified by means of appropriate stickers. The pipes, which must project at least 300 mm on every side, will be slung with ropes of equal length and secured to the lifting hook (apply stops at the end of the pipes to prevent the weight from causing the rope to slip off the pipe). The units of frame 4-5, contrariwise, should be lifted using lifting eyebolts on the base of the unit.

Use ropes or belts whose length exceeds the machine height and place spacer boards and bars on the top of the unit to avoid damaging the sides and upper part of the unit itself.

In this phase, before the definitive position, vibration damping supports can be installed (optional).

**⚠ WARNING** In all lifting operations make sure that the unit is securely anchored in order to prevent accidental falls or overturning.

**⚠ USE** all available lifting points.

## 13 SITING AND DAMPERS

It is important to bear in mind the following aspects when choosing the best site for installing the unit:

- Size and origin of water pipes;
- Location of the power supply;
- Solidity of the supporting surface;
- Avoid the possible reverberation of sound waves; do not install the unit in narrow or cramped spaces;
- Ensure adequate accessibility for maintenance or repairs (see section on 14 p. 27).

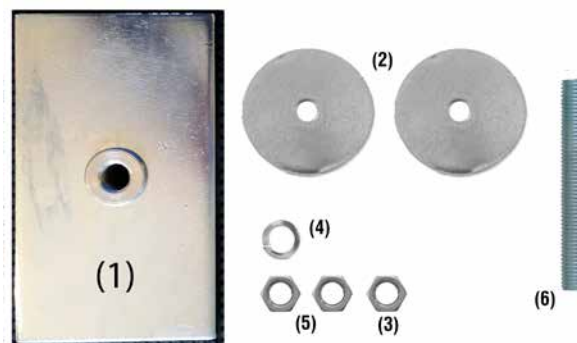
**⚠ DANGER:** This appliance is not intended to be used by children or persons with physical, sensorial or mental problems, inexpert or unprepared, without supervision. Be careful that children do not approach the appliance.

When installing the vibration dampers follow the instructions below:

1. Screw the jack (6) into the vibration damper with jack support plate (1) all the way;
2. Screw the bolt (5) until the jack (6) is locked in place on the vibration damper (1);
3. Screw the bolt (3) and insert one of the two disks (2) into the jack (6);
4. Insert the jack (6) into the hole on the unit base;
5. Adjust the height by turning the bolt (3);
6. Insert the second disk (2) into the jack (6) until it makes contact with the base;
7. Tighten the vibration damper with the split washer (4) and the bolt (5) to the unit base.

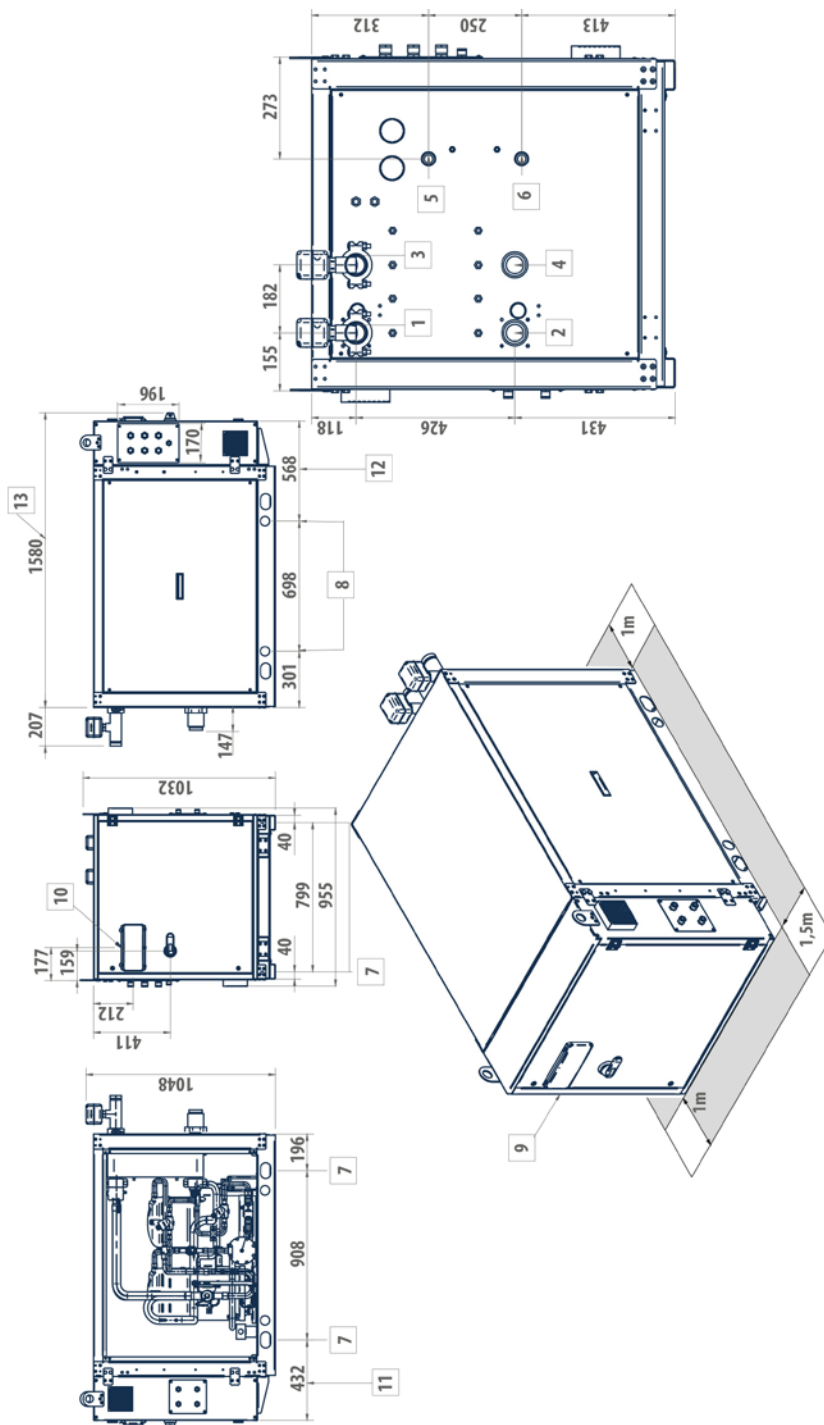
WRE	DAMPERS
F1	4
F2	4
F3	4
F4	4
F5	4

» Dampers components



# 14 DIMENSIONS

» WLE 52 - 92



**Legenda WLE C**

- 1 Dissipation side - outlet (Victaulic 2")
- 2 Dissipation side - Inlet (Victaulic 2")
- 3 User side - inlet (Victaulic 2")
- 4 User side - outlet (Victaulic 2")
- 5 De-superheater water outlet 1"

**6. Desuperheater water inlet 1"**

- 7 Vibration dumpers
- 8 Lifting points
- 9 Power supply input
- 10 User interface

**11 Outdoor installation 463 mm**  
**12 Outdoor installation 568 mm**  
**13 Outdoor installation 1611 mm**  
**Chiller Flow Switch Position: 2-3**  
**Closing panelling available on request**

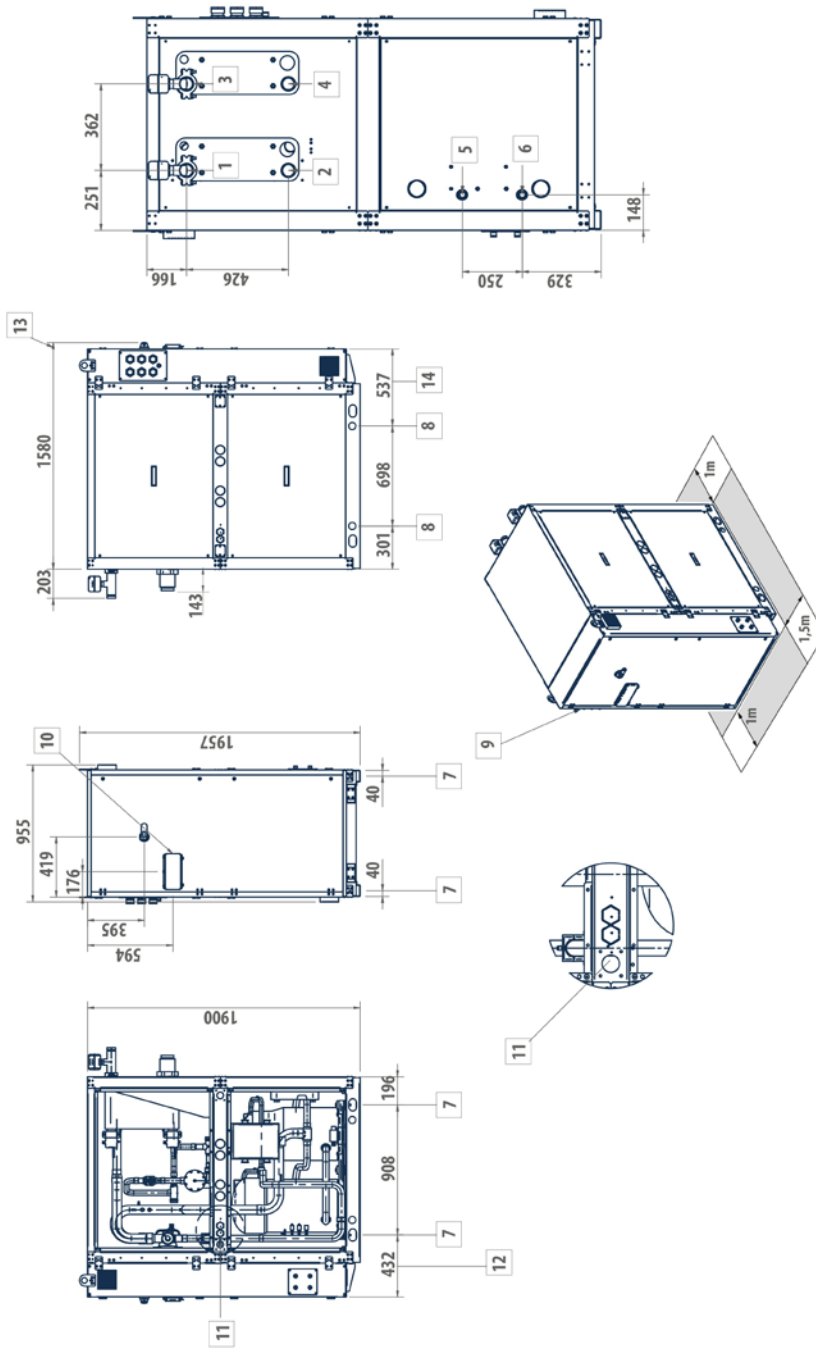
**Legenda WLE H**

- 1 Dissipation side - inlet (Victaulic (Victaulic 2"))
- 2 Dissipation side - outlet (Victaulic 2")
- 3 User side - inlet (Victaulic 2")
- 4 User side - outlet (Victaulic 2")
- 5 De-superheater water outlet 1"

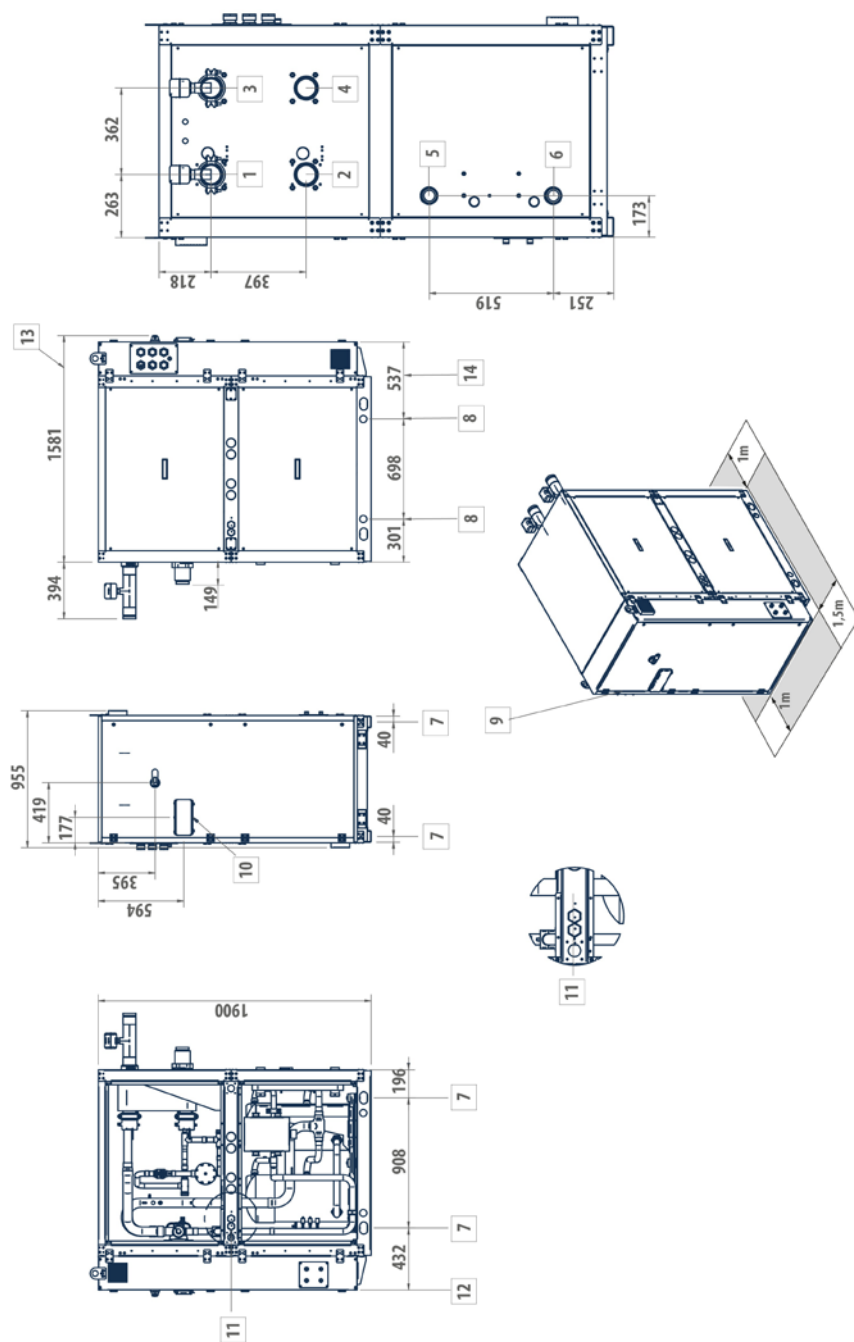
**6. Desuperheater water inlet 1"**

- 7 Vibration dumpers
- 8 Lifting points
- 9 Power supply input
- 10 User interface
- 11 Outdoor installation 463 mm
- 12 Outdoor installation 568 mm
- 13 Outdoor installation 1611 mm

**Heat Pump Flow Switch Position: 1-3**  
**Closing panelling available on request**



- Legenda WLE C**
- 1 Dissipation side - outlet (Victaulic 2")
  - 2 Dissipation side - inlet (Victaulic (Victaulic 2"))
  - 3 User side - inlet (Victaulic 2")
  - 4 User side - outlet (Victaulic 2")
  - 5 De-superheater water outlet 1"
  - 6 Desuperheater water inlet 1"
  - 7 Vibration dumpers
  - 8 Lifting points
  - 9 Power supply input
  - 10 User interface
  - 11 Outlet safety valve G. 3/4" F (only 152)
- Legenda WLE H**
- 1 Dissipation side - inlet (Victaulic (Victaulic 2"))
  - 2 Dissipation side - outlet (Victaulic 2")
  - 3 User side - Inlet (Victaulic 2")
  - 4 User side - outlet (Victaulic 2")
  - 5. De-superheater water outlet 1"
- Chiller Flow Switch Position: 2-3**
- Closing panelling available on request**
- 12 Outdoor installation 463 mm
  - 13 Outdoor installation 1612 mm
  - 14 Outdoor installation 568 mm
- Heat Pump Flow Switch Position: 1-3**
- Closing panelling available on request**
- 6 Desuperheater water inlet 1"
  - 7 Vibration dumpers
  - 8 Lifting points
  - 9 Power supply input
  - 10 User interface
  - 11 Outlet safety valve G. 3/4" F (only 152)
  - 12 Outdoor installation 463 mm
  - 13 Outdoor installation 1612 mm
  - 14 Outdoor installation 568 mm



**Legenda WLE C**

- 1 Dissipation side - outlet (Victaulic 3")
- 2 Dissipation side - inlet (Victaulic 3")
- 3 User side - inlet (Victaulic 3")
- 4 User side - outlet (Victaulic 3")
- 5 De-superheater water outlet 2"
- 6 Desuperheater water inlet 2"
- 7 Vibration dumpers
- 8 Lifting points
- 9 Power supply input
- 10 User interface
- 11 Outlet safety valve G. 3/4" F

**12** Outdoor installation 463 mm

- 13 Outdoor installation 1612 mm
- 14 Outdoor installation 568 mm

**Chiller Flow Switch Position: 2-3**

**Closing panelling available on request**

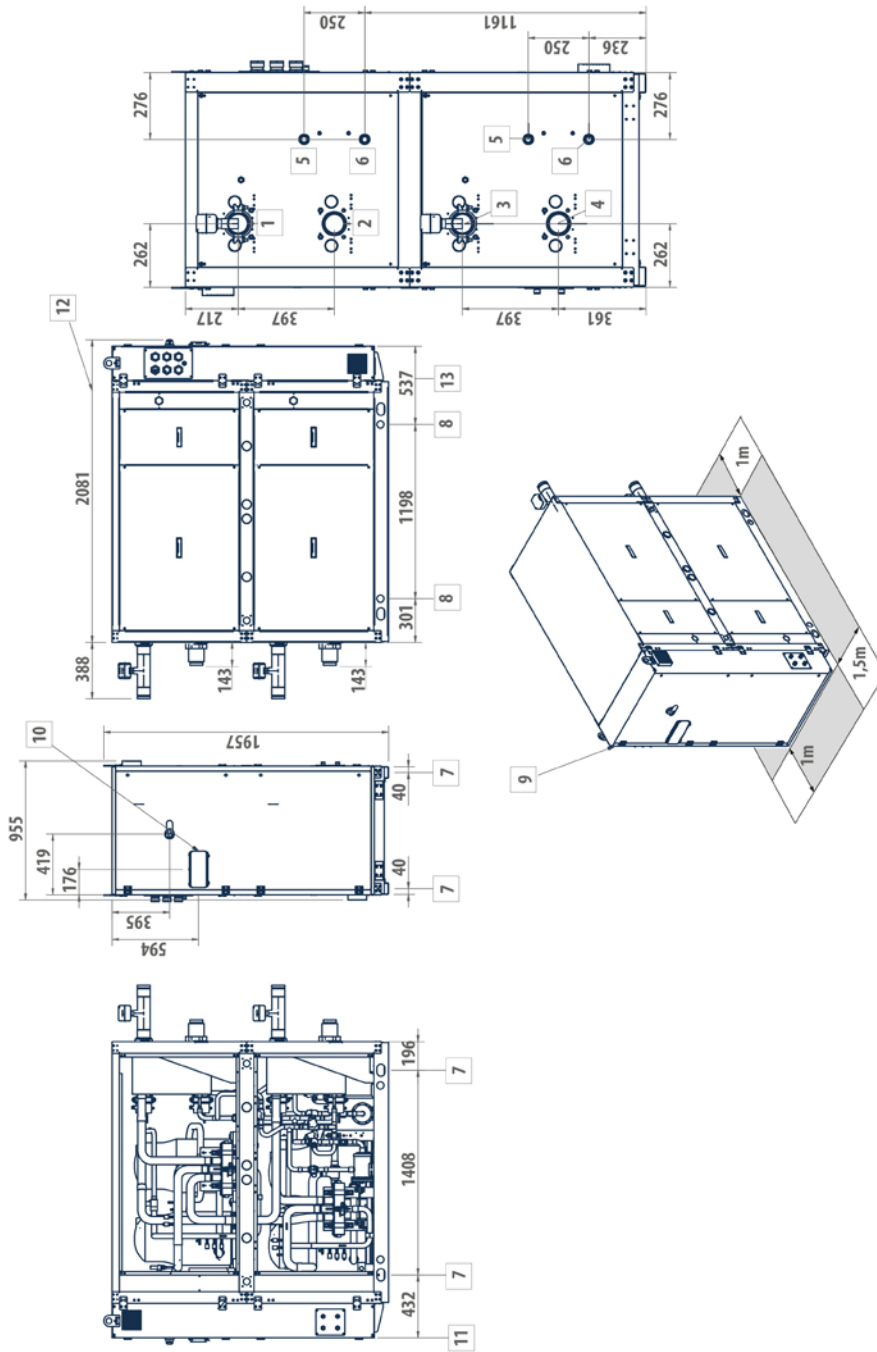
**Legenda WLE H**

- 1 Dissipation side - inlet (Victaulic 3")
- 2 Dissipation side - outlet (Victaulic 3")
- 3 User side - inlet (Victaulic 3")
- 4 User side - outlet (Victaulic 3")
- 5 De-superheater water outlet 2"

**6** Desuperheater water inlet 2"

- 7 Vibration dumpers
- 8 Lifting points
- 9 Power supply input
- 10 User interface
- 11 Outlet safety valve G. 3/4" F
- 12 Outdoor installation 463 mm
- 13 Outdoor installation 1612 mm
- 14 Outdoor installation 568 mm

**Heat Pump Flow Switch Position: 1-3**  
**Closing panelling available on request**



**Legenda WLE C**

- 1 Dissipation side - inlet (Victaulic 3")
- 2 Dissipation side - outlet (Victaulic 3")
- 3 User side - outlet (Victaulic 3")
- 4 User side - inlet (Victaulic 3")
- 5 De-superheater water outlet 2"
- 6 Desuperheater water inlet 2"
- 7 Vibration dumpers
- 8 Lifting points
- 9 Power supply input
- 10 User interface

**11**

- Outdoor installation 463 mm
- 12 Outdoor installation 2112 mm
- 13 Outdoor installation 568 mm

**Chiller Flow Switch Position: 2-3**

**Closing panelling available on request**

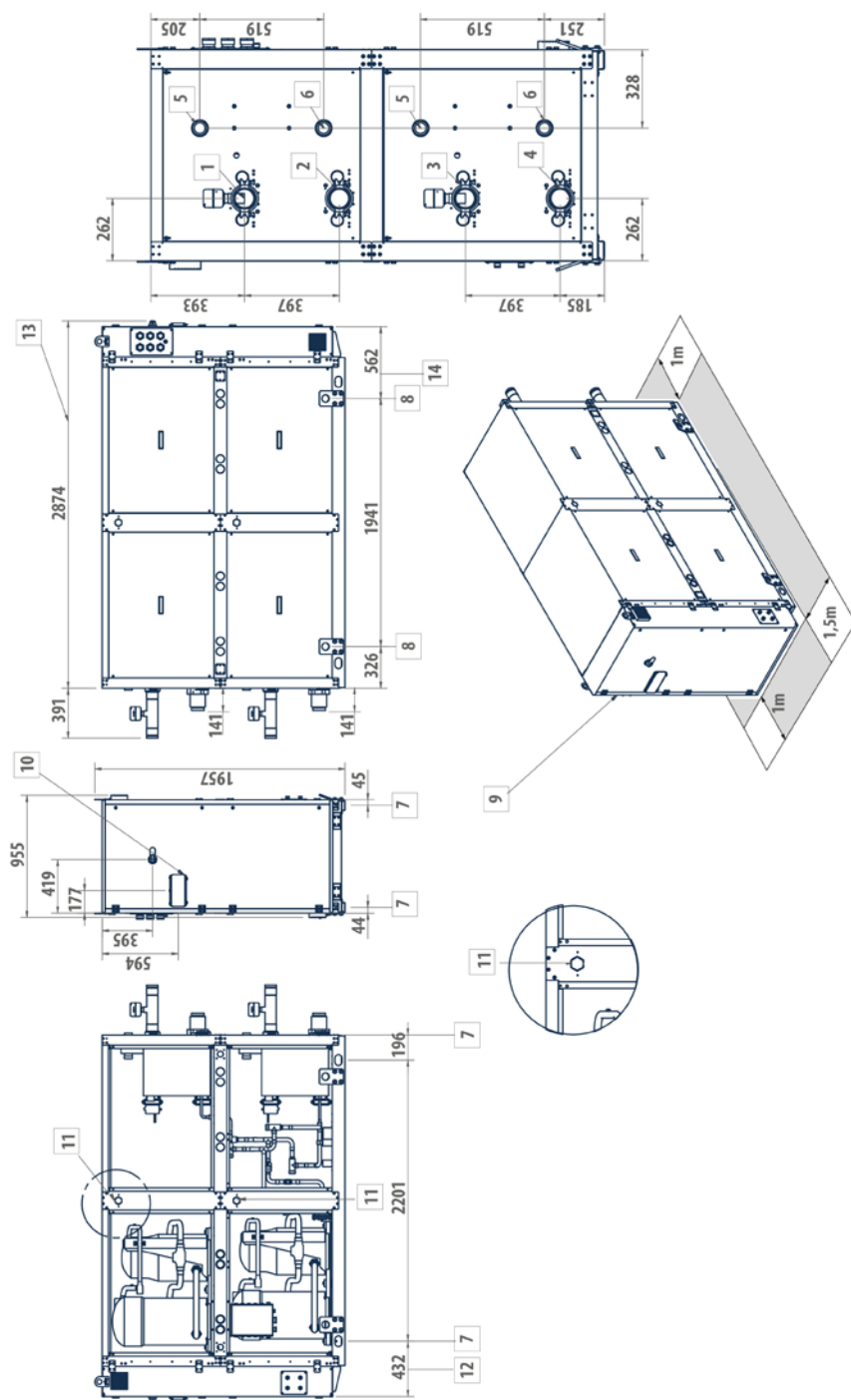
**Legenda WLE H**

- 1 Dissipation side - inlet (Victaulic 3")
- 2 Dissipation side - outlet (Victaulic 3")
- 3 User side - inlet (Victaulic 3")
- 4 User side - outlet (Victaulic 3")
- 5 De-superheater water outlet 2"

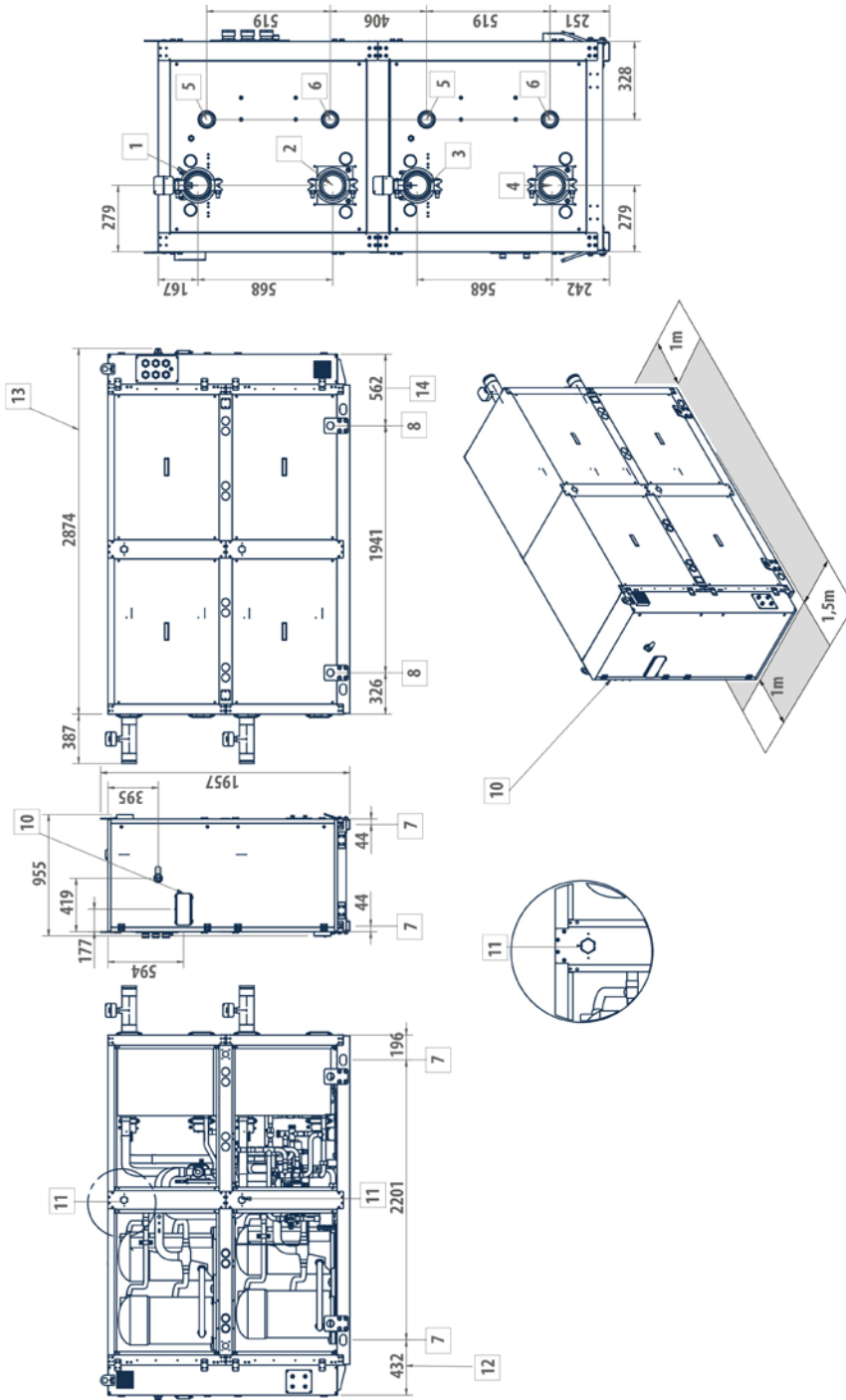
**6**

- Desuperheater water inlet 2"
- 7 Vibration dumpers
- 8 Lifting points
- 9 Power supply input
- 10 User interface
- 11 Outdoor installation 463 mm
- 12 Outdoor installation 2112 mm
- 13 Outdoor installation 568 mm

**Heat Pump Flow Switch Position: 1-3**  
**Closing panelling available on request**



- Legenda WLE C**
- 1 User side - inlet (Victaulic 3")
  - 2 User side - outlet (Victaulic 3")
  - 3 Dissipation side - inlet (Victaulic 3")
  - 4 Dissipation side - outlet (Victaulic 3")
  - 5 De-superheater water outlet 2"
  - 6 De-superheater water inlet 2"
  - 7 Vibration dumpers
  - 8 Lifting points
  - 9 Power supply input
  - 10 User interface
  - 11 Outlet safety valve G. 1" F
- Legenda WLE H**
- 1 User side - inlet (Victaulic 3")
  - 2 User side - outlet (Victaulic 3")
  - 3 Dissipation side - inlet (Victaulic 3")
  - 4 Dissipation side - outlet (Victaulic 3")
  - 5 De-superheater water outlet 2"
- Chiller Flow Switch Position: 1-4**  
Closing panelling available on request
- Chiller Flow Switch Position: 1-3**  
Closing panelling available on request
- 12 Outdoor installation 463 mm
  - 13 Outdoor installation 2905 mm
  - 14 Outdoor installation 593 mm
- Legenda WLE H**
- 1 User side - inlet (Victaulic 3")
  - 2 User side - outlet (Victaulic 3")
  - 3 Dissipation side - inlet (Victaulic 3")
  - 4 Dissipation side - outlet (Victaulic 3")
  - 5 De-superheater water outlet 2"
  - 6 Desuperheater water inlet 2"
  - 7 Vibration dumpers
  - 8 Lifting points
  - 9 Power supply input
  - 10 User interface
  - 11 Outlet safety valve G. 1" F



**Legenda WLE C**

- 1 User side - inlet (Victaulic 4")
- 2 User side - outlet (Victaulic 4")
- 3 Dissipation side - outlet (Victaulic 4")
- 4 Dissipation side - inlet (Victaulic 4")
- 5 De-superheater water outlet 2"
- 6 Desuperheater water inlet 2"
- 7 Vibration dumpers
- 8 Lifting points
- 9 Power supply input
- 10 User interface
- 11 Outlet safety valve G. 1" F

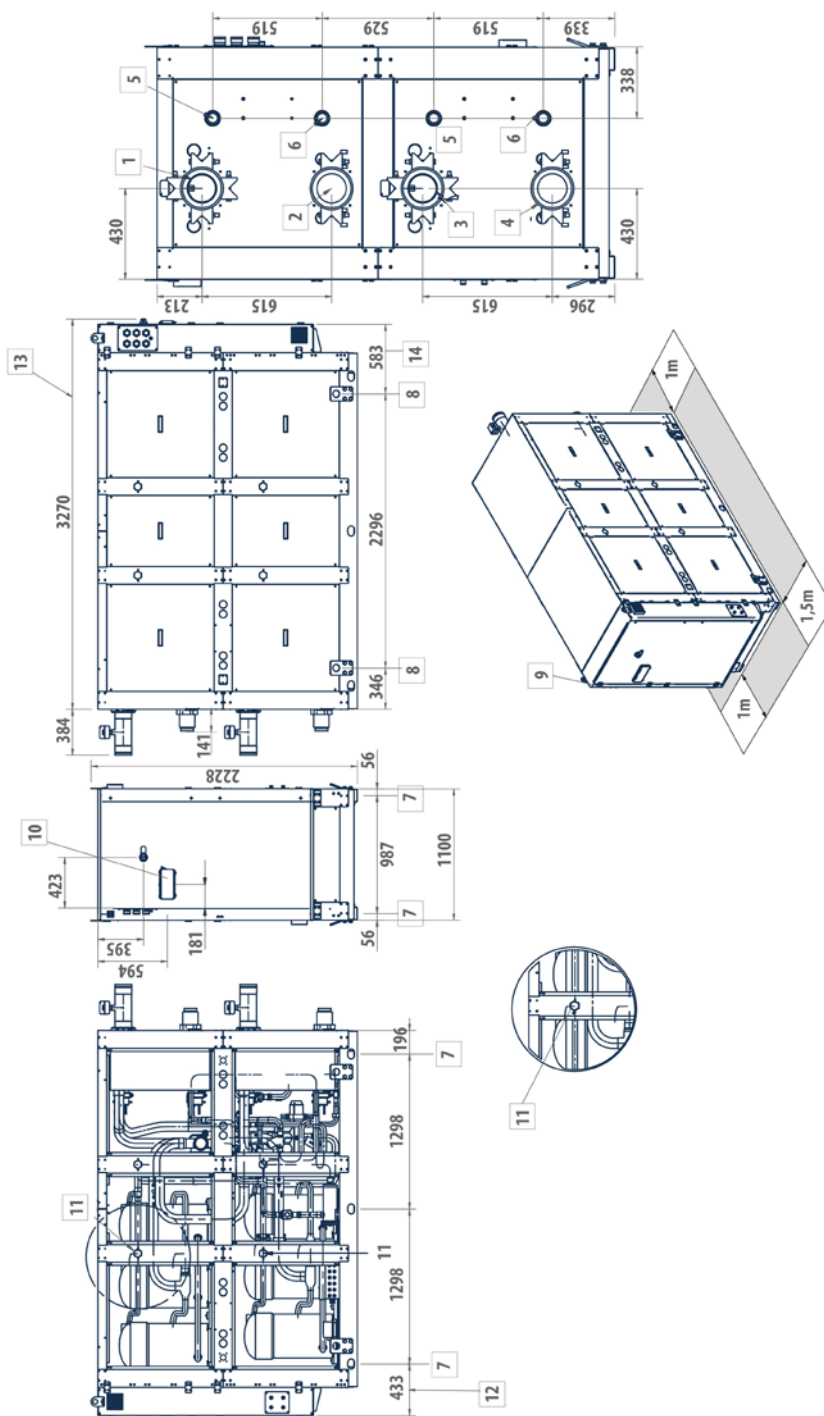
**12 Outdoor installation 463 mm**

- 13 Outdoor installation 2905 mm
  - 14 Outdoor installation 593 mm
- Chiller Flow Switch Position: 1-4**  
**Closing paneling available on request**  
**Legenda WLE H**
- 1 User side - inlet (Victaulic 4")
  - 2 User side - outlet (Victaulic 4")
  - 3 Dissipation side - inlet (Victaulic 4")
  - 4 Dissipation side - outlet (Victaulic 4")
  - 5 De-superheater water outlet 2"
  - 6 Desuperheater water inlet 2"

**7 Vibration dumpers**

- 8 Lifting points
  - 9 Power supply input
  - 10 User interface
  - 11 Outlet safety valve G. 1" F
  - 12 Outdoor installation 463 mm
  - 13 Outdoor installation 2905 mm
  - 14 Outdoor installation 593 mm
- Heat Pump Flow Switch Position: 1-3**  
**Closing paneling available on request**



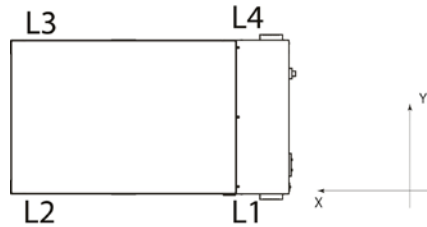


- Legenda WLE C**
- 1 User side - inlet (Victaulic 5")
  - 2 User side - outlet (Victaulic 5")
  - 3 Dissipation side - inlet (Victaulic 5")
  - 4 Dissipation side - outlet (Victaulic 5")
  - 5 De-superheater water outlet 2"
  - 6 Desuperheater water inlet 2"
  - 7 Vibration dumpers
  - 8 Lifting points
  - 9 Power supply input
  - 10 User interface
  - 11 Outlet safety valve G. 1" 1/4 F
- Legenda WLE H**
- 1 User side - inlet (Victaulic 5")
  - 2 User side - outlet (Victaulic 5")
  - 3 Dissipation side - inlet (Victaulic 5")
  - 4 Dissipation side - outlet (Victaulic 5")
  - 5 De-superheater water outlet 2"
  - 6 Desuperheater water inlet 2"
- Chiller Flow Switch Position: 1-4**
- 12 Outdoor installation 462 mm
  - 13 Outdoor installation 3299 mm
  - 14 Outdoor installation 593 mm
- Heat Pump Flow Switch Position: 1-3**
- 1 User side - inlet (Victaulic 5")
  - 2 User side - outlet (Victaulic 5")
  - 3 Dissipation side - inlet (Victaulic 5")
  - 4 Dissipation side - outlet (Victaulic 5")
  - 5 De-superheater water outlet 2"
  - 6 Desuperheater water inlet 2"
- Closing panelling available on request**
- 7 Vibration dumpers
  - 8 Lifting points
  - 9 Power supply input
  - 10 User interface
  - 11 Outlet safety valve G. 1" 1/4 F
  - 12 Outdoor installation 462 mm
  - 13 Outdoor installation 3299 mm
  - 14 Outdoor installation 593 mm

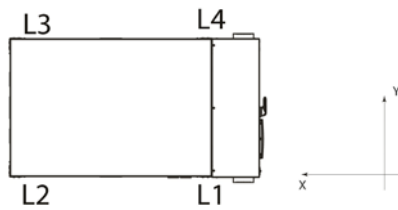
# 15 WEIGHTS

This drawing shows the points of the machine for which weights have been calculated, with respect to the basic chiller and heat pump model. The weights are shown in the tables below.

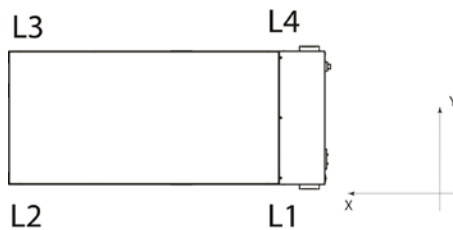
» WLE Frame 1



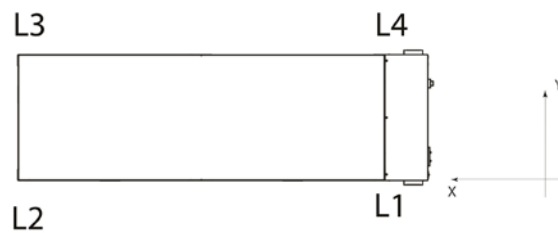
» WLE Frame 2



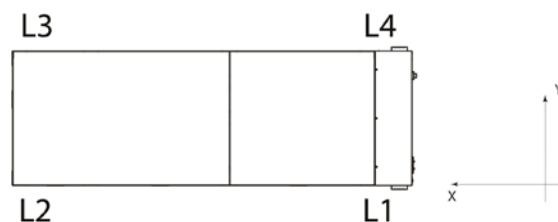
» WLE Frame 3



» WLE Frame 4



» WLE Frame 5



» Lifting center of gravity for transporting unit C version without hydraulic options

WLE		052	062	072	082	092	122	132	152	154	182
Xb	mm	403	406	411	413	406	384	376	369	464	367
Yb	mm	691	684	675	670	668	675	674	671	890	666

WLE		184	212	214	242	244	274	314	364
Xb	mm	411	362	417	363	422	419	425	391
Yb	mm	989	661	978	645	968	970	955	1526

WLE		384	454	504	606	636	696	746
Xb	mm	394	399	424	508	509	506	507
Yb	mm	1507	1488	1376	1560	1551	1560	1545

» Lifting center of gravity for transporting unit H version without hydraulic options

WLE		052	062	072	082	092	122	132	152	154	182
Xb	mm	691	684	675	670	668	675	674	671	890	666
Yb	mm	403	406	411	413	406	384	376	369	469	369

WLE		212	214	242	244	274	314	364
Xb	mm	661	976	645	966	969	1521	1502
Yb	mm	364	423	365	428	425	399	402

WLE		384	454	504	606	636	696	746
Xb	mm	1484	1375	1390	2669	2775	2734	2838
Yb	mm	407	431	427	1558	1549	1558	1543

All weights shown below include the R454B refrigerant charge.

» Operating weight C version without hydraulic options

WLE		052	062	072	082	092	122	132	152	154	182
L1	kg	97	101	104	109	124	166	185	208	286	218
L2	kg	72	76	79	84	96	150	169	191	190	204
L3	kg	69	75	82	89	99	114	124	136	311	145
L4	kg	73	76	77	80	88	130	140	153	210	159
Total	kg	310	328	343	361	408	560	619	688	997	727

WLE		212	214	242	244	274	314
L1	kg	240	323	252	325	365	358
L2	kg	229	191	256	194	213	213
L3	kg	160	239	182	252	280	292
L4	kg	171	220	179	222	243	238
Total	kg	799	973	869	992	1101	1101

WLE		364	384	454	504	606	636	696	746
L1	kg	539	571	574	665	838	866	869	896
L2	kg	231	247	254	329	554	576	563	587
L3	kg	317	353	372	559	676	709	692	732
L4	kg	307	320	323	371	524	538	525	538
Total	kg	1393	1491	1523	1925	2592	2689	2648	2752

» Operating weight H version without hydraulic options

WLE		052	062	072	082	092	122	132	152	154	182
L1	kg	98	103	107	111	127	169	189	212	288	223
L2	kg	73	78	82	86	99	153	173	196	191	209
L3	kg	70	77	85	91	102	117	128	141	318	150
L4	kg	74	77	80	82	91	133	145	157	217	164
Total	kg	315	334	353	371	418	572	635	706	1014	746

WLE		184	212	214	242	244	274	314	364
L1	kg	315	245	324	258	326	367	541	574
L2	kg	186	234	192	261	195	215	233	250
L3	kg	227	165	247	188	260	288	330	367
L4	kg	221	176	228	185	230	251	320	334
Total	kg	948	820	991	893	1012	1121	1425	1523

WLE		384	454	504	606	636	696	746
L1	kg	576	668	696	843	872	874	901
L2	kg	256	331	336	559	582	568	593
L3	kg	386	574	579	559	582	568	593
L4	kg	337	386	397	709	746	730	769
Total	kg	1555	1959	2008	558	575	563	575

## 16 ELECTRICAL DATA

### » Electrical data WLE

WLE		052	062	072	082	092	122	132	152	154
Maximum current absorption	A	29,0	36,0	42,0	49,0	57,0	72,0	81,0	91,0	90,0
Start up current	A	112	161	211	218	178	288	296	356	224
Startup current with soft starter	A	67	97	127	131	107	173	178	214	153
Auxiliary power supply	V-ph-Hz	230/1/50								
Cross-section area of power cables	(1) mm <sup>2</sup>	10,0	10,0	16,0	16,0	16,0	25,0	25,0	25,0	25,0
Safety fuse F	A	40	50	50	63	63	100	100	100	100
Circuit breaker IL	A	40	50	50	63	63	100	100	100	100

(1) The shown section is to be considered as the minimum recommended section. The cables must be chosen in compliance with CEI - UNEL 35024/1. standard.

WLE		182	184	212	214	242	244	274	314	364
Maximum current absorption	A	112	114	130	128	151	144	161	182	224
Start up current	A	380	293	399	307	420	360	377	447	492
Startup current with soft starter	A	228	199	239	210	252	244	259	305	340
Auxiliary power supply	V-ph-Hz	230/1/50								
Cross-section area of power cables	(1) mm <sup>2</sup>	35,0	35,0	35,0	35,0	50,0	50,0	50,0	50,0	70,0
Safety fuse F	A	125	125	160	160	200	160	200	200	250
Circuit breaker IL	A	125	125	160	160	200	160	200	200	250

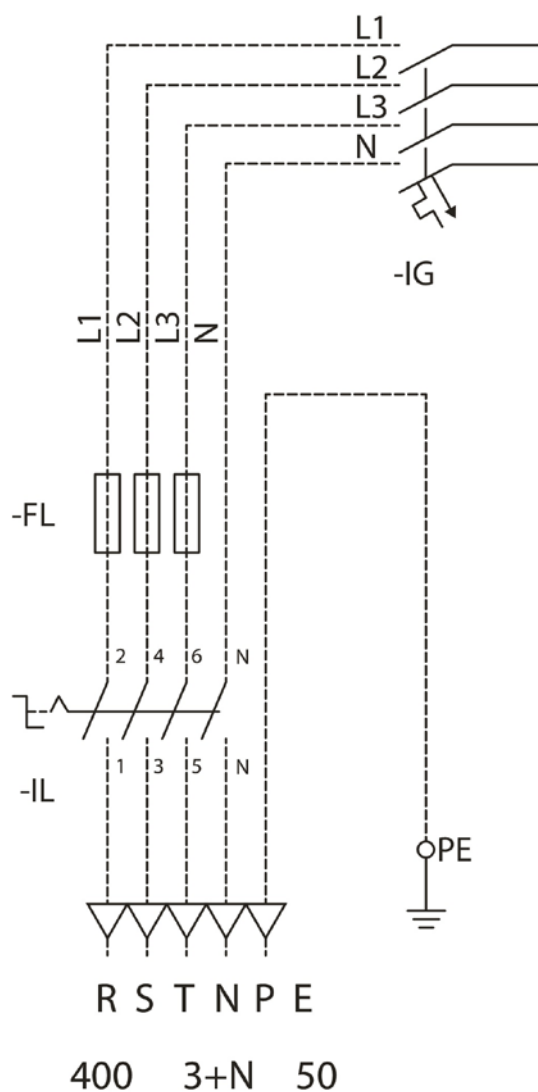
(1) The shown section is to be considered as the minimum recommended section. The cables must be chosen in compliance with CEI - UNEL 35024/1. standard.

WLE		384	454	504	606	636	696	746
Maximum current absorption	A	240	261	303	328	370	412	454
Start up current	A	508	529	571	593	638	680	722
Startup current with soft starter	A	353	369	403	421	457	491	524
Auxiliary power supply	V-ph-Hz	230/1/50						
Cross-section area of power cables	(1) mm <sup>2</sup>	70,0	70,0	95,0	95,0	120	120	120
Safety fuse F	A	315	315	355	355	400	500	500
Circuit breaker IL	A	315	315	400	400	400	630	630

(1) The shown section is to be considered as the minimum recommended section. The cables must be chosen in compliance with CEI - UNEL 35024/1. standard.

- The unit's maximum power input, corresponding to the mains power that must be available in order to operate the unit, can be calculated from the maximum current input, if the supply voltage and the power factor of the mains power supply are known.
- The maximum current absorption refers to the current that will trigger the internal safety devices of the unit. It is the maximum current allowed in the unit. This value may never be exceeded; it must be used as a reference for determining the size of the power supply line and the related safety devices (refer to the wiring diagram supplied with the units).

» Main electrical connection of units





Galletti S.p.A Organization has a Management System Certified by Kiwa Cermet Italia S.p.A, according to the UNI EN ISO 9001:2015, UNI EN ISO 14001:2015 and UNI ISO 45001:2018 standards.

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