

VLS Chillers and HP with Low GWP refrigerant



Outdoor packaged unit

VLS 160 - 590 kW



R-454B
refrigerant



Plate
exchanger



Piping shell
and tube heat
exchanger



Axial fan



Scroll
compressor



Cooling only



Heating/
Cooling

PLUS

- » Refrigerant with GWP of less than 500
- » Available version with R410A refrigerant (VRS)
- » High seasonal efficiency values
- » Electronic expansion valve
- » Up to 6 compressors
- » 1 or 2 cooling circuits
- » Remote connectivity with the most common protocols
- » Possibility to configure low-noise versions
- » Available version with shell and tube heat exchanger

VLS heat pumps and water chillers are designed for heating or cooling the water to be used in air-conditioning systems for residential, commercial, or industrial use.

The use of low-GWP refrigerant ensures compliance with the limits established by the F-GAS regulation regarding gases that potentially contribute to global warming (greenhouse gases).

Air-water unit with high seasonal efficiency and low-GWP refrigerant

VLS is Galletti's new range of air-cooled monobloc chillers and heat pumps for outdoor installation featuring R454B refrigerant. R454B is a next generation A2L refrigerant with a GWP of only 467, one of the lowest on the market. This GWP value ensures that the VLS range complies with the gradual reduction of greenhouse gas emissions required by the F-GAS regulation, down to the stricter limits foreseen for 2030.

The range consists of 13 models with cooling capacities ranging from 160 to 590 kW, available in cooling only or reversible heat pump versions. The range's main strength is its high seasonal efficiency, which is designed to permanently reduce annual energy consumption as well as meet the minimum efficiency requirements established by ErP 2021. In order to increase the efficiency at partial loads, all VLS models are provided with tandem or trio solutions (2 or 3 compressors on a single circuit) and equipped with electronic expansion valve as standard.

The use of top quality components at the cutting edge of technology in the cooling, hydraulic, and electrical systems makes VLS units chillers state of the art in terms of efficiency, reliability, and operating limits.

In fact, the ability to produce water from -10 °C to 57 °C and operate at full load with outdoor air temperatures from -15 °C to 46 °C is guaranteed. The range allows high configurability from an acoustic point of view, having a wide range of accessories designed to reduce noise emissions. It is also guaranteed the possibility of selecting the execution with shell and tube heat exchanger for all models above 200 kW. The advanced control, always present in the whole range, allows a continuous monitoring of the operating parameters, advanced adjustment logics, and connectivity.



CONFIGURATOR

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

Version	Field	1	2	3	4	5	6	7	8	9	10	11	12	13
VLS162H50A		A	1	S	0	E	0	0	M	0	0	G	0	1

To verify the compatibility of the options, use the selection software or the price list.

AVAILABLE VERSIONS

Only cooling versions and plate exchanger

VLS..CS0A	Power supply 400V-3N-50Hz
VLS..CS2A	Power supply 400V-3N-50Hz + circuit breaker
VLS..CS4A	Power supply 400V-3-50Hz
VLS..CS5A	Power supply 400V-3-50Hz + circuit breaker

Only cooling versions and shell and tube heat exchanger

VLS..CT0A	Power supply 400V-3N-50Hz
VLS..CT2A	Power supply 400V-3N-50Hz + circuit breaker
VLS..CT4A	Power supply 400V-3-50Hz
VLS..CT5A	Power supply 400V-3-50Hz + circuit breaker

Reversible heat pump versions and plate heat exchanger

VLS..HS0A	Power supply 400V-3N-50Hz
VLS..HS2A	Power supply 400V-3N-50Hz + circuit breaker
VLS..HS4A	Power supply 400V-3-50Hz
VLS..HS5A	Power supply 400V-3-50Hz + circuit breaker

Reversible heat pump versions and shell and tube heat exchanger

VLS..HT0A	Power supply 400V-3N-50Hz
VLS..HT2A	Power supply 400V-3N-50Hz + circuit breaker
VLS..HT4A	Power supply 400V-3-50Hz
VLS..HT5A	Power supply 400V-3-50Hz + circuit breaker

CONFIGURATION OPTIONS

- | | |
|---|--|
| <p>1 Expansion valve</p> <p>A Electronic</p> <p>2 Water pump and accessories</p> <p>0 Absent</p> <p>1 LP pump</p> <p>2 LP OR double pump</p> <p>3 HP pump</p> <p>4 HP OR double pump</p> <p>5 LP pump with Viton seal</p> <p>6 LP OR double pump with Viton seal</p> <p>7 HP pump with Viton seal</p> <p>8 HP OR double pump with Viton seal</p> <p>A LP inverter pump</p> <p>B LP OR inverter double pump</p> <p>C HP Inverter pump</p> <p>D HP OR inverter double pump</p> <p>E LP inverter pump with Viton seal</p> <p>F LP inverter double pump with Viton seal</p> <p>G HP inverter pump with Viton seal</p> <p>3 Water buffer tank</p> <p>0 Absent</p> <p>S Present (Hydro Smart Flow not allowed)</p> <p>4 Partial heat recovery</p> <p>0 Absent</p> <p>D Included with pump free contact</p> <p>5 Air flow modulation</p> <p>A Condensation control with high-head EC fans</p> <p>C Condensation control by phase-cut fans</p> <p>E Condensation control with EC fans</p> <p>6 Antifreezing kit</p> <p>0 Absent</p> <p>E Evaporator</p> <p>P Evaporator, pump and expansion vessel</p> <p>S Evaporator, pump, expansion vessel and tank</p> | <p>7 Acoustic insulation and attenuation</p> <p>0 Absent</p> <p>2 Compressor soundproof insulations</p> <p>4 Low-noise EC fans</p> <p>5 Compressor soundproof insulations + Low-noise EC fans</p> <p>8 Refrigerant pipework accessories</p> <p>0 Absent</p> <p>1 Liquid separator at compressor intake (heat pump only). Mandatory on 243,456,546,576 models.</p> <p>2 Liquid separator in compressor intake + liquid injection for operation limit extension (only for heat pumps)</p> <p>9 Remote control / Serial communication</p> <p>2 RS485 connection port (Modbus protocol or Carel)</p> <p>B BACNET IP/pCOWeb serial board</p> <p>G BACNET IP / pCOWeb serial board + supervision software</p> <p>S Remote simplified control panel</p> <p>X mProcess remote control panel</p> <p>10 Special coils / Protective treatments</p> <p>0 Copper-aluminium (heat pump only)</p> <p>C Cataphoresis treatment on fins and coil carpentry</p> <p>E Microchannel in Long Life Alloy (standard for chiller)</p> <p>I Hydrophilic (heat pump only)</p> <p>M Microchannel with E-coating (standard for chiller)</p> <p>P Pre-painted fins with polyester paint (only heat pump)</p> <p>R Copper-copper (heat pump only)</p> <p>11 Anti vibration shock mounts</p> <p>0 Absent</p> <p>G Made of rubber</p> <p>M With spring</p> <p>12 Outdoor coil trace heater</p> <p>0 Absent</p> <p>1 Present (heat pump only)</p> <p>13 Onboard controller</p> <p>1 Advanced</p> |
|---|--|

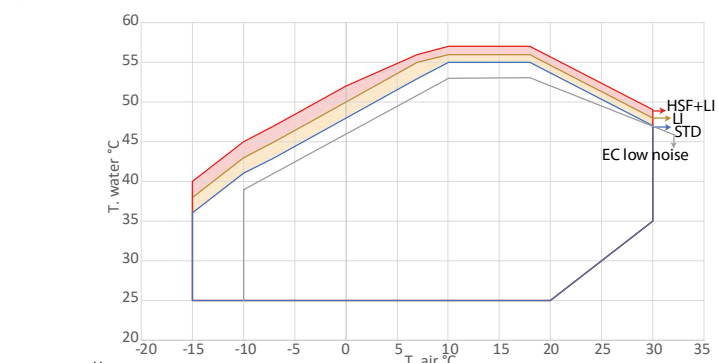
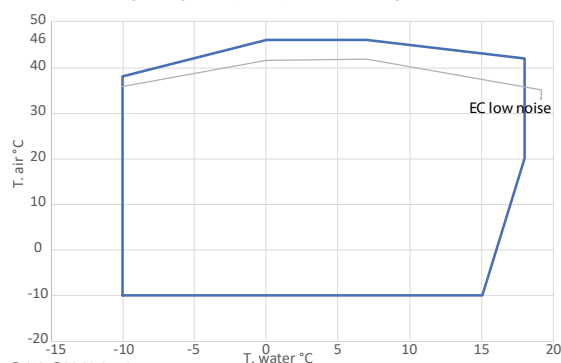
ACCESSORIES

A	Outdoor finned coil heat exchanger protection filters	M	0-10 V signal for external user pump control (on-board pump excluded)
B	Hydro smart flow (water tank not allowed)	N	Compressor tandem/trio isolation valves
C	Pair of couplings Victaulic	O	Anti-intrusion grille
D	ON/OFF status of the compressors	P	Y-shaped filter
E	Remote control for step capacity limit (advanced controller required)	Q	Night-time low-noise
F	Configurable digital alarm board (advanced controller required)	R	Enabling 2nd set-point / external alarm signaling via digital input
G	Soft starter	S	Hot-wire electronic flow switch
H	Power factor capacitors	T	Energy metering kit
I	Refrigerant sensors	U	Covering panels V
L	Water pipes additional insulation	V	Set-point modification with 4-20mA signal

EXTENDED OPERATING RANGE

The generous sizing of the coils combined with innovative technological solutions makes it possible for VLS to operate in very different climatic environments.

The operating range may vary depending on the model; always refer to the technical documentation for more information.

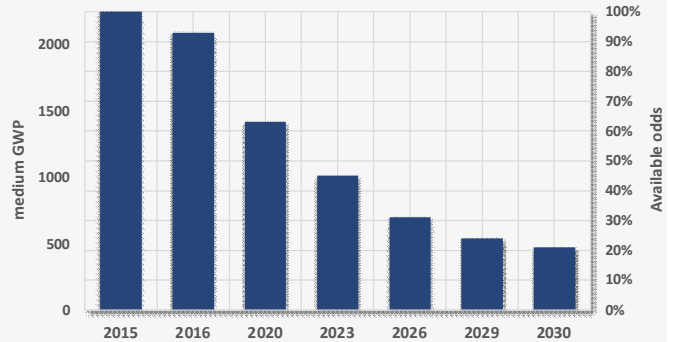


VLS Chillers and HP with Low GWP refrigerant

FUNCTIONS

Very low GWP refrigerant

Use of R454B refrigerant with low environmental impact. R454B is a next-generation A2L refrigerant with a GWP of only 467, one of the lowest on the market. This GWP value ensures that the VLS range complies with the gradual reduction of quotas of greenhouse refrigerants in the European market required by the F-GAS regulation, down to the stricter limits foreseen for 2030



Scroll compressors

The scroll-type compressors designed to work with R454B, which can be sound insulated, include internal thermal protection of the windings and are installed on special anti-vibration supports. The scroll-type compressors are equipped with an IDV valve. The IDV intermediate delivery valve technology allows the compressor to avoid losses caused by overcompression and, consequently, the additional work the motor has to perform in partial-load operation, thus saving energy and improving seasonal and partial-load efficiency from 3% to 10%.



Liquid injection

Units can be supplied with a hot liquid by-pass to stabilise the discharge temperature of the compressor under the most critical operating conditions. Thanks to the injection of hot liquid at the evaporator outlet, it is possible to raise the evaporation pressure, thereby ensuring that the duty point remains within the compressor envelope even beyond conventional limits; in fact, hot water production up to 57°C is guaranteed.

To prevent liquid intake, this option includes a liquid/gas separator installed on the common branch before the tandem or trio compressor systems.

HSF - hydro smart flow

Available on request, the HSF kit is placed on the unit's hydronic side and consists of a 4-way valve and a kit. Hydro Smart Flow, which is activated at the time of seasonal changeover, reverses the direction of the water flow over the plates to be consistent with the flow of the refrigerant. In this manner heat exchange always occurs in counterflow, this optimizing the unit's operation in the summer and winter seasons and extending the unit operating range.

Microchannel

The entire Chiller range has microchannel coils as a standard feature. The large heat exchange surface, the absence of a copper-aluminum interface, and the perfect flow of air make it possible to achieve the same performance while reducing the refrigerant charge by up to 40%, with obvious benefits from an ecological point of view. Microchannel coils Galletti always feature surface treatment as a standard feature in order to provide maximum safety, even in harsh environments.



MAIN COMPONENTS

Structure

The range is designed modularly, replicating the optimized structure of V configuration condensing coils and fans. Its design ensures stability, sturdiness even during the most critical phases (such as transportation), and maximum accessibility to components in every VLS unit.



Electronic valve

It is standard on the entire range and offers greater responsiveness during transients. The electronics also manage the synergistic operation of the compressors and the valve, thereby making it possible to vary overheating and maximize efficiency at partial loads.



Safety procedures in case of refrigerant leakage

As an option feature, the units are equipped with leak detection sensors in the electrical control board and near the cooling circuit. The microprocessor manages the procedures for securing and shutting down the unit in case of refrigerant leakage, also making it possible to divert the power supply of the control unit that collects the information from the leak sensors on a low-voltage emergency line. This function allows the complete disconnection of the power to the unit during maintenance operations, while leaving all the safety systems enabled.



Economy - low noise function

Based on time slots or no-voltage contact, this function makes it possible to reduce the maximum speed of fans and the number of compressors that can be activated. This operation is especially useful during the night phase, when the power required is very low, and the unit can operate at a reduced level, thus lowering the noise level during a sensitive time period.

Low noise execution

The units can be supplied in a low-noise version, with silencing housings and reduced speed BLDC fans. This configuration, together with the night-time attenuation function, significantly reduces the sound power level.

Primary heat pump management

In case of a decoupled circuit, it is possible, via remote sensor, to switch off the primary circuit's pumps, when permitted, due to low thermal load. In this manner a further reduction in pumping costs is achieved.



VLS Chillers and HP with Low GWP refrigerant

WATER CHILLERS RATED TECHNICAL DATA VLS C

VLS C			162	202	234	243	254	274	314
Power supply		V-ph-Hz	400-3N-50						
Cooling capacity	(1)	kW	160	210	232	238	250	274	315
Total power input	(1)	kW	58,3	67,3	73,9	80,5	85,0	102	116
EER	(1)		2,75	3,12	3,14	2,96	2,94	2,69	2,71
SEER	(2)(E)		4,25	4,68	4,57	4,52	4,33	4,27	4,25
Water flow	(1)	l/h	27516	36134	39882	40923	42982	47115	54152
Water pressure drop	(1)(E)	kPa	26	28	45	31	50	47	52
Available pressure head - LP pumps	(1)	kPa	118	150	120	136	107	99	83
Available pressure head - HP pumps	(1)	kPa	213	205	176	192	164	200	183
Maximum current absorption		A	123	156	176	181	192	214	244
Start up current		A	387	422	396	439	404	476	512
Startup current with soft starter		A	301	335	331	359	339	393	425
Compressors / circuits			2/1	2/1	4/2	3/1	4/2	4/2	4/2
Buffer tank volume		dm ³	180	350	350	350	350	350	350
Sound power level	(3)	dB(A)	89	91	89	92	90	91	91
Sound power level, low-noise version	(3)	dB(A)	85	85	84	85	84	84	85
Sound power level quiet version	(3)	dB(A)	83	83	82	83	82	82	83
Weight without options		kg	1047	1744	1876	1797	1783	1982	1994
Maximum transport weight		kg	1188	1915	2048	1946	1984	2125	2137

VLS C			344	374	414	456	546	576	
Power supply		V-ph-Hz	400-3N-50						
Cooling capacity	(1)	kW	344	370	420	475	545	590	
Total power input	(1)	kW	118	125	126	162	179	201	
EER	(1)		2,92	2,96	3,33	2,93	3,04	2,94	
SEER	(2)(E)		4,43	4,33	4,78	4,61	4,64	4,62	
Water flow	(1)	l/h	59124	63602	72187	81639	93660	101397	
Water pressure drop	(1)(E)	kPa	36	39	30	35	41	46	
Available pressure head - LP pumps	(1)	kPa	123	116	155	133	157	130	
Available pressure head - HP pumps	(1)	kPa	228	222	213	190	199	173	
Maximum current absorption		A	263	278	312	362	415	460	
Start up current		A	537	550	585	624	642	734	
Startup current with soft starter		A	447	462	496	544	548	648	
Compressors / circuits			4/2	4/2	4/2	6/2	6/2	6/2	
Buffer tank volume		dm ³	550	550	700	700	850	850	
Sound power level	(3)	dB(A)	93	93	94	94	95	95	
Sound power level, low-noise version	(3)	dB(A)	87	87	88	87	89	89	
Sound power level quiet version	(3)	dB(A)	85	85	86	85	87	87	
Weight without options		kg	2557	2563	3233	3499	4090	4144	
Maximum transport weight		kg	2825	2832	3423	3689	4375	4429	

(1) Outdoor air temperature 35°C, water temperature 12°C / 7°C (EN14511:2022)

(2) η 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 EN14825:2022 regulation.

(3) Sound power level measured according to ISO 9614

(E) EUROVENT certified data

HEAT PUMPS RATED TECHNICAL DATA VLS H

VLS H			162	202	234	243	254	274	314
Power supply		V-ph-Hz	400-3N-50						
Cooling capacity	(1)(E)	kW	160	210	232	236	250	274	310
Total power input	(1)(E)	kW	58,5	67,7	73,9	80,5	85,0	102	116
EER	(1)(E)		2,73	3,10	3,14	2,93	2,94	2,69	2,67
SEER	(2)(E)		4,13	4,56	4,41	4,45	4,22	4,17	4,16
Water flow	(1)	l/h	27525	36122	39897	40581	42992	47115	53291
Water pressure drop	(1)(E)	kPa	26	28	45	30	50	47	50
Available pressure head - LP pumps	(1)	kPa	117	151	121	137	108	99	82
Available pressure head - HP pumps	(1)	kPa	213	206	178	193	165	200	182
Heating capacity	(3)(E)	kW	167	224	256	249	264	290	330
Total power input	(3)(E)	kW	56,4	68,2	77,9	83,5	82,5	99,4	112
COP	(3)(E)		2,96	3,28	3,29	2,98	3,20	2,92	2,95
SCOP	(2)(E)		3,56	3,50	4,01	3,44	4,04	3,71	3,87
Heating energy efficiency class	(4)(E)		A+	A+	A++	A+	A++	A+	A++
Water flow	(3)	l/h	28975	38872	44430	43208	45822	50334	57286
Water pressure drop	(3)(E)	kPa	29	32	55	34	56	53	57
Available pressure head - LP pumps	(3)	kPa	98	139	108	121	91	78	54
Available pressure head - HP pumps	(3)	kPa	193	194	164	177	148	178	153
Maximum current absorption		A	123	156	176	181	192	214	244
Start up current		A	387	422	396	439	404	476	512
Startup current with soft starter		A	301	335	331	359	339	393	425
Compressors / circuits			2/1	2/1	4/2	3/1	4/2	4/2	4/2
Buffer tank volume		dm ³	180	350	350	350	350	350	350
Sound power level	(5)(E)	dB(A)	89	91	89	92	90	91	91
Sound power level, low-noise version	(5)	dB(A)	85	85	84	85	84	84	85
Sound power level quiet version	(5)	dB(A)	83	83	82	83	82	82	83
Weight without options		kg	1155	2040	2172	2126	1969	2174	2188
Maximum transport weight		kg	1296	2241	2374	2162	2149	2345	2360

(1) Outdoor air temperature 35°C, water temperature 12°C / 7°C (EN14511:2022)

(2) η 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 EN14825:2022 regulation.

(3) Outdoor air temperature dry bulb 7°C / wet bulb 6°C, water temperature 40°C / 45°C (EN14511:2022)

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

(5) Sound power level measured according to ISO 9614

(E) EUROVENT certified data

VLS Chillers and HP with Low GWP refrigerant

HEAT PUMPS RATED TECHNICAL DATA VLS H

VLS H			344	374	414	456	546	576
Power supply		V-ph-Hz	400-3N-50					
Cooling capacity	(1)(E)	kW	343	366	418	472	543	585
Total power input	(1)(E)	kW	118	126	128	162	179	205
EER	(1)(E)		2,91	2,90	3,26	2,91	3,03	2,85
SEER	(2)(E)		4,35	4,23	4,69	4,60	4,61	4,60
Water flow	(1)	l/h	58960	62911	71831	81112	93327	100545
Water pressure drop	(1)(E)	kPa	36	38	30	35	41	45
Available pressure head - LP pumps	(1)	kPa	124	117	157	134	159	132
Available pressure head - HP pumps	(1)	kPa	229	223	214	191	201	175
Heating capacity	(3)(E)	kW	370	391	443	505	572	627
Total power input	(3)(E)	kW	115	125	129	164	178	196
COP	(3)(E)		3,21	3,13	3,42	3,08	3,21	3,20
SCOP	(2)(E)		3,68	3,72	3,65	3,42	3,65	3,80
Heating energy efficiency class	(4)(E)		A+					
Water flow	(3)	l/h	64235	67894	76926	87689	99325	108888
Water pressure drop	(3)(E)	kPa	42	44	34	40	46	52
Available pressure head - LP pumps	(3)	kPa	109	102	143	113	130	95
Available pressure head - HP pumps	(3)	kPa	214	207	200	168	172	138
Maximum current absorption		A	263	278	312	362	415	460
Start up current		A	537	550	585	624	642	734
Startup current with soft starter		A	447	462	496	544	548	648
Compressors / circuits			4/2	4/2	4/2	6/2	6/2	6/2
Buffer tank volume		dm ³	550	550	700	700	850	850
Sound power level	(5)(E)	dB(A)	93	93	94	94	95	95
Sound power level, low-noise version	(5)	dB(A)	87	87	88	87	89	89
Sound power level quiet version	(5)	dB(A)	85	85	86	85	87	87
Weight without options		kg	2869	2876	3623	3889	4641	4697
Maximum transport weight		kg	2909	2930	3813	4079	4926	4982

(1) Outdoor air temperature 35°C, water temperature 12°C / 7°C (EN14511:2022)

(2) η 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 EN 14825:2022 regulation.

(3) Outdoor air temperature dry bulb 7°C / wet bulb 6°C, water temperature 40°C / 45°C (EN14511:2022)

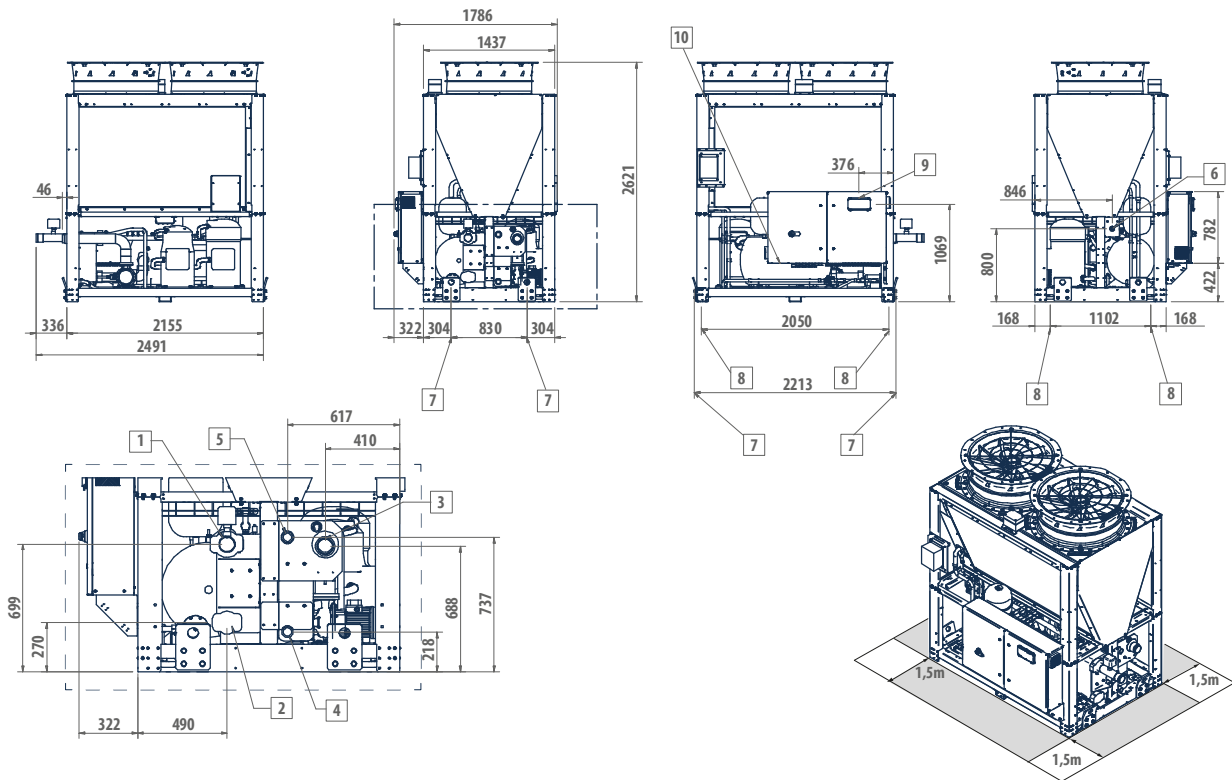
(4) Seasonal energy efficiency class for LOW TEMPERATURE room heating under AVERAGE climatic conditions [EUROPEAN REGULATION No 811/2013]

(5) Sound power level measured according to ISO 9614

(E) EUROVENT certified data

DIMENSIONAL DRAWINGS

VLS 162 C



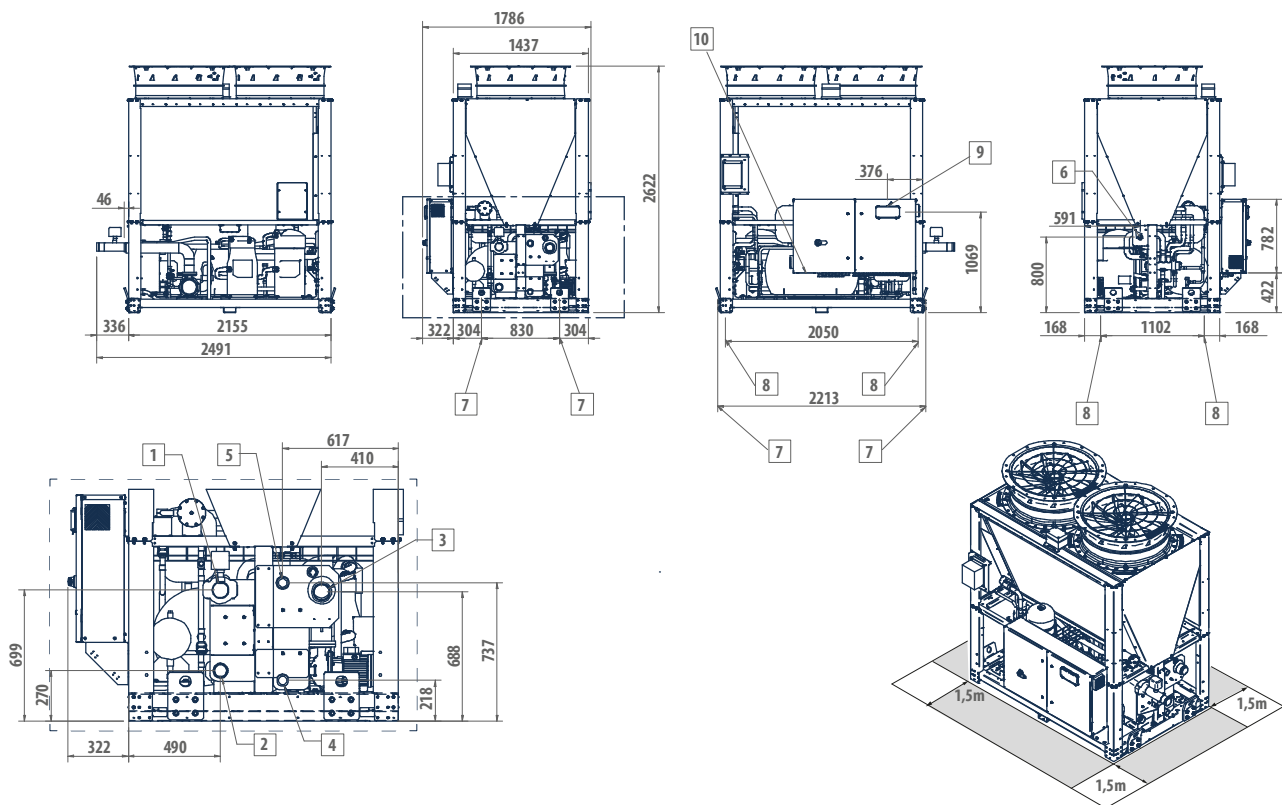
LEGEND

1	Water inlet Victaulic 3"
2	Water outlet, evaporator only Victaulic 3"
3	Water outlet pump and/or tank Victaulic 3"
4	Heat exchanger inlet 2" M
5	Heat exchanger outlet 2" M
6	Outlet safety valve 1" M
7	Lifting points
8	Vibration dumpers
9	User interface
10	Power supply input

VLS Chillers and HP with Low GWP refrigerant

DIMENSIONAL DRAWINGS

VLS 162 H

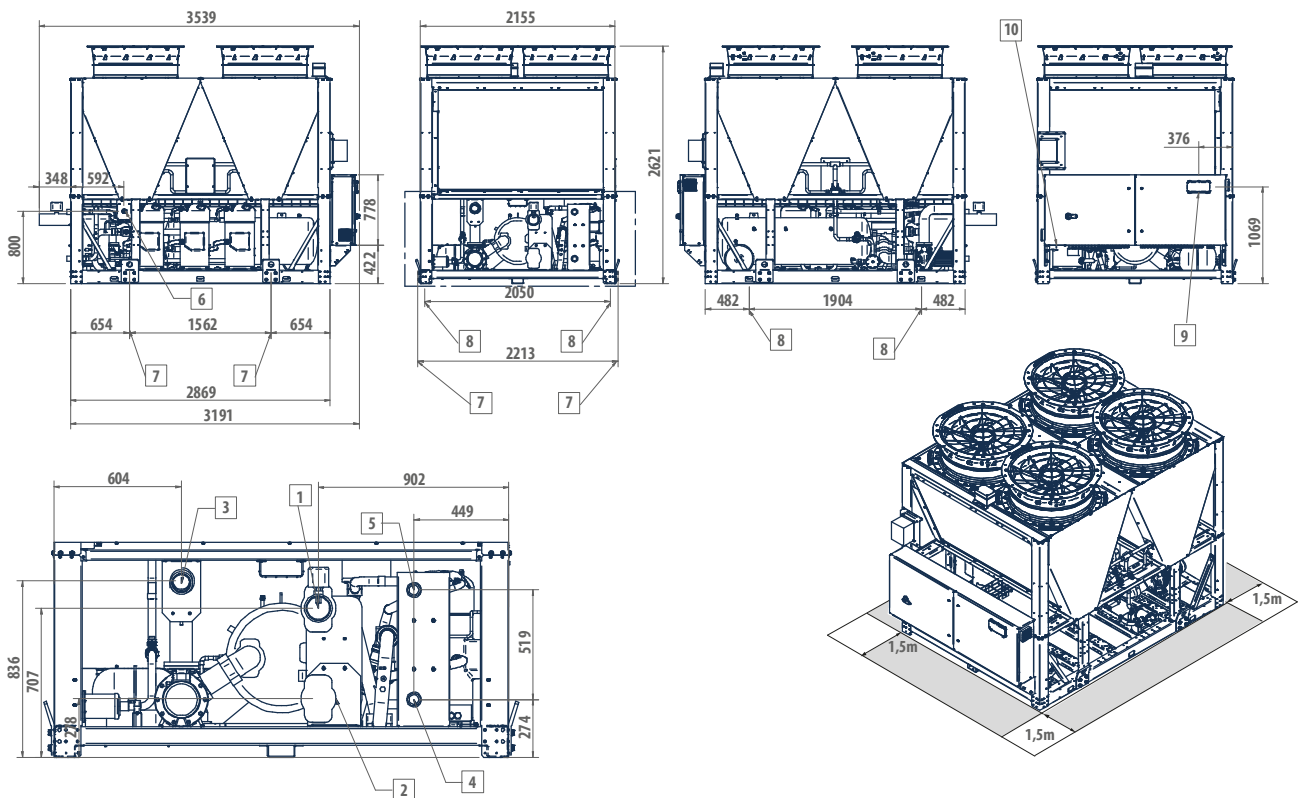


LEGEND

- | | |
|----|--|
| 1 | Water inlet Victaulic 3" |
| 2 | Water outlet, evaporator only Victaulic 3" |
| 3 | Water outlet pump and/or tank Victaulic 3" |
| 4 | Heat exchanger inlet 2" M |
| 5 | Heat exchanger outlet 2" M |
| 6 | Outlet safety valve 1" M |
| 7 | Lifting points |
| 8 | Vibration dumpers |
| 9 | User interface |
| 10 | Power supply input |

DIMENSIONAL DRAWINGS

VLS C 202 - 243 mono circuit



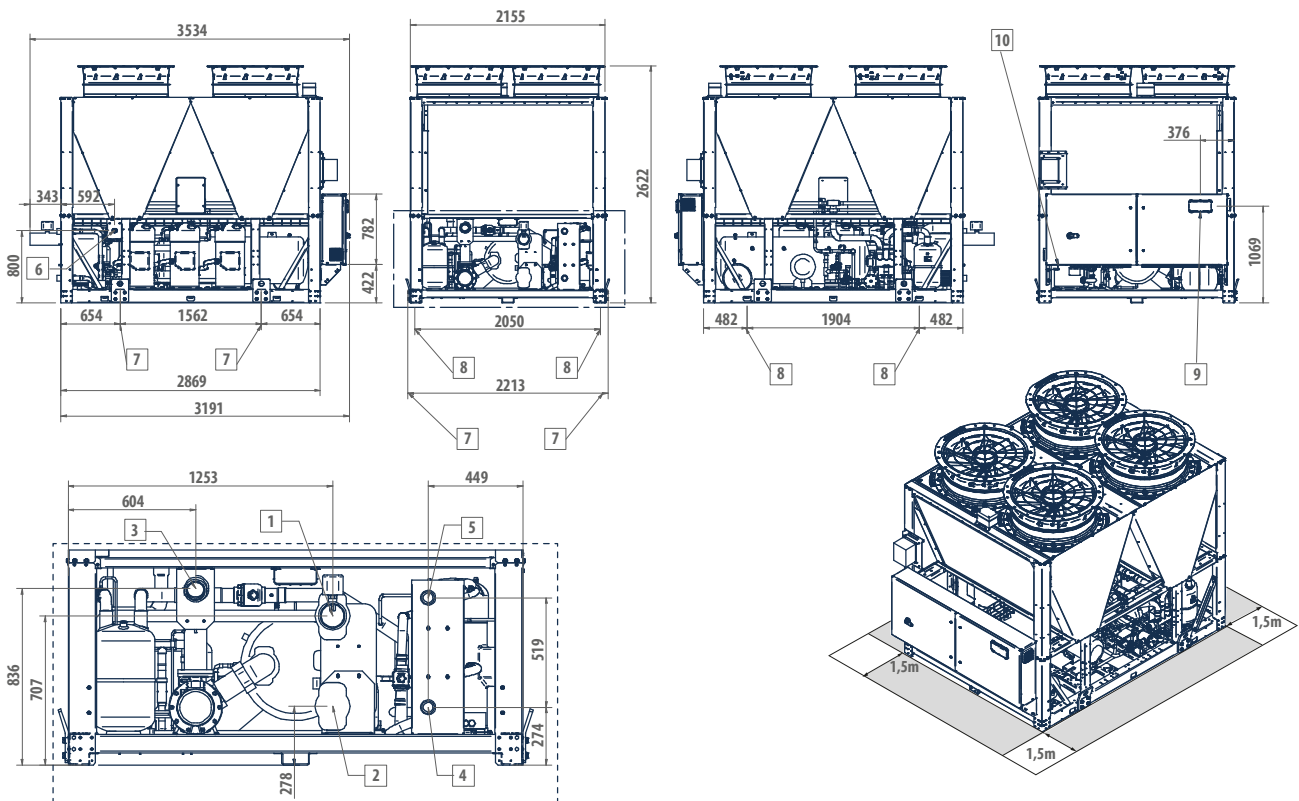
LEGEND

1	Water inlet Victaulic 4"
2	Water outlet, evaporator only Victaulic 4"
3	Water outlet pump and/or tank Victaulic 4"
4	Heat exchanger inlet 2" M
5	Heat exchanger outlet 2" M
6	Outlet safety valve 1" M
7	Lifting points
8	Vibration dumpers
9	User interface
10	Power supply input

VLS Chillers and HP with Low GWP refrigerant

DIMENSIONAL DRAWINGS

VLS H 202 - 243 mono circuit

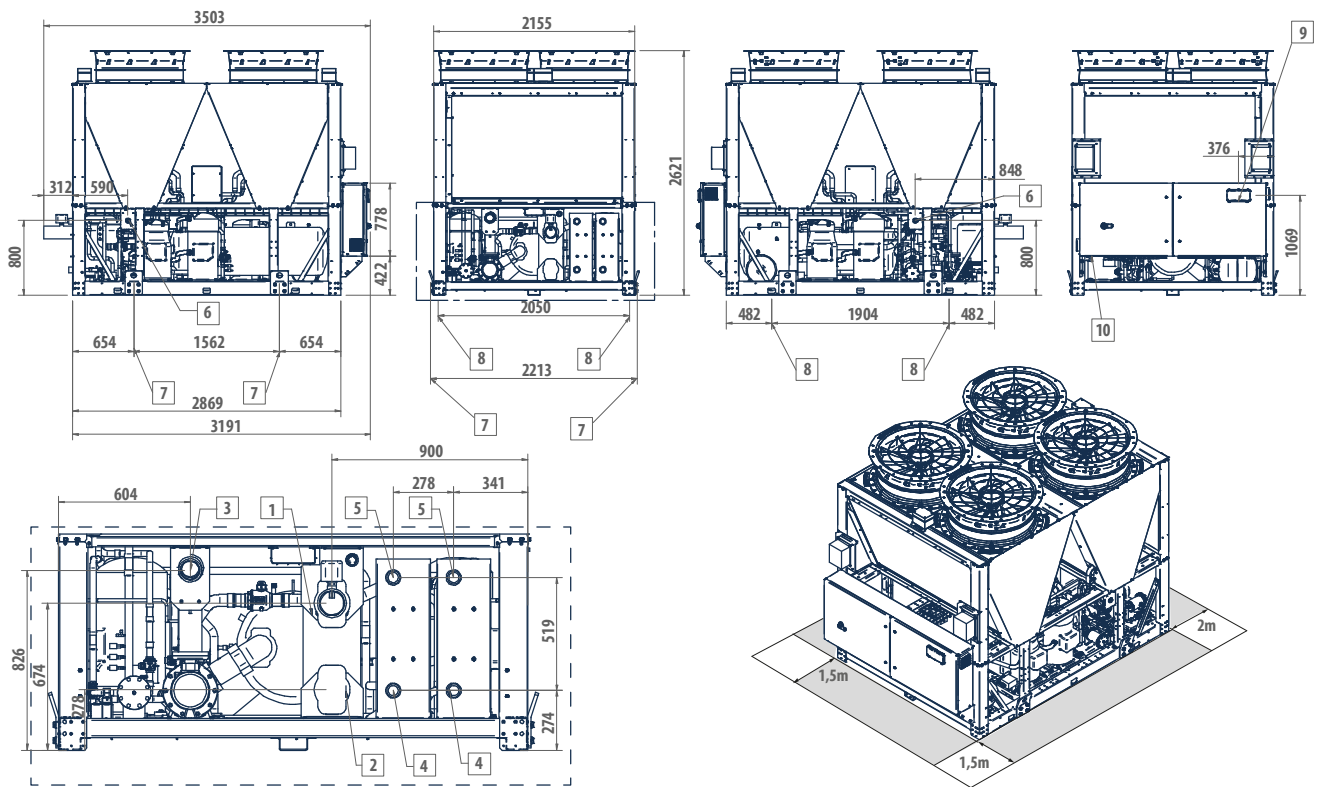


LEGEND

1	Water inlet Victaulic 4"
2	Water outlet, evaporator only Victaulic 4"
3	Water outlet pump and/or tank Victaulic 4"
4	Heat exchanger inlet 2" M
5	Heat exchanger outlet 2" M
6	Outlet safety valve 1" M
7	Lifting points
8	Vibration dumpers
9	User interface
10	Power supply input

DIMENSIONAL DRAWINGS

VLS C 234; 254 - 314 double circuit



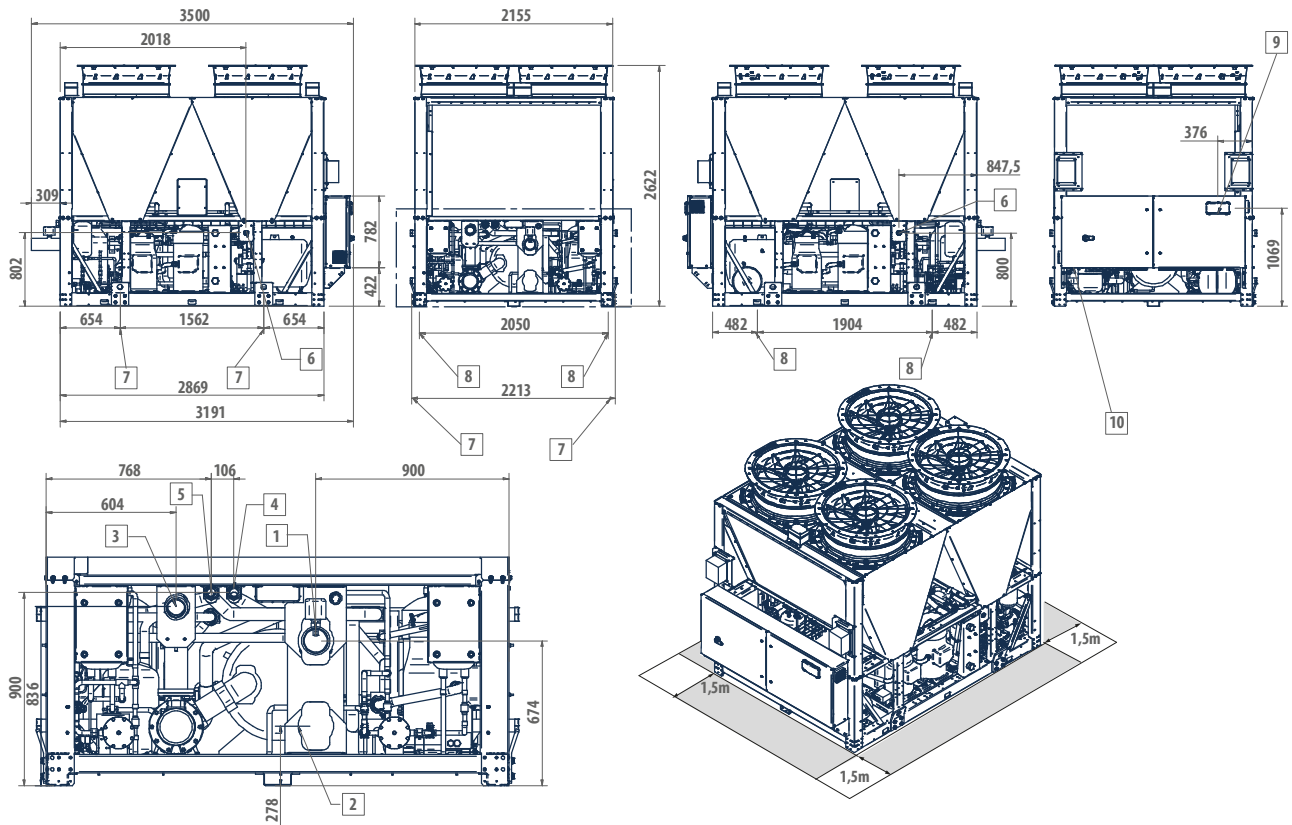
LEGEND

1	Water inlet Victaulic 4"
2	Water outlet, evaporator only Victaulic 4"
3	Water outlet pump and/or tank Victaulic 4"
4	Heat exchanger inlet 2" M
5	Heat exchanger outlet 2" M
6	Outlet safety valve 1" M
7	Lifting points
8	Vibration dumpers
9	User interface
10	Power supply input

VLS Chillers and HP with Low GWP refrigerant

DIMENSIONAL DRAWINGS

VLS H 234; 254 - 314 double circuit

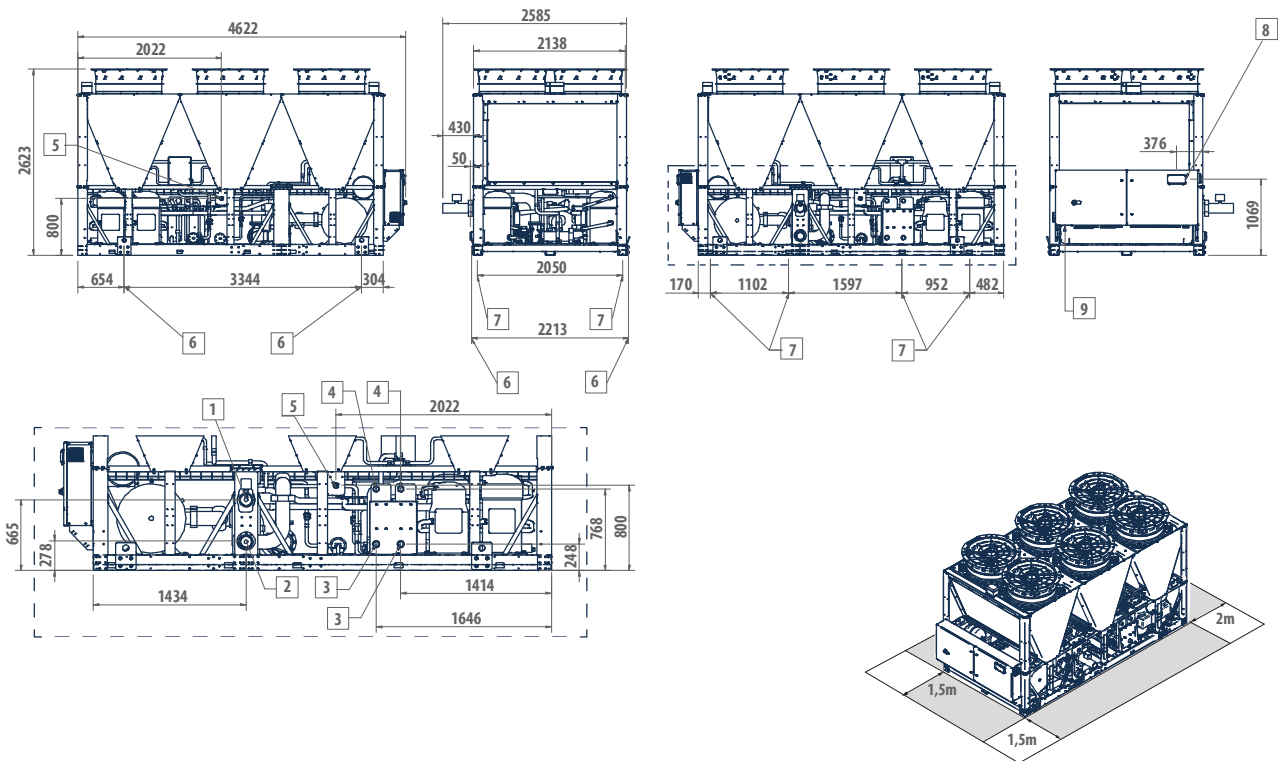


LEGEND

1	Water inlet Victaulic 4"
2	Water outlet, evaporator only Victaulic 4"
3	Water outlet pump and/or tank Victaulic 4"
4	Heat exchanger inlet 2" M
5	Heat exchanger outlet 2" M
6	Outlet safety valve 1" M
7	Lifting points
8	Vibration dumpers
9	User interface
10	Power supply input

DIMENSIONAL DRAWINGS

VLSC 344 - 374



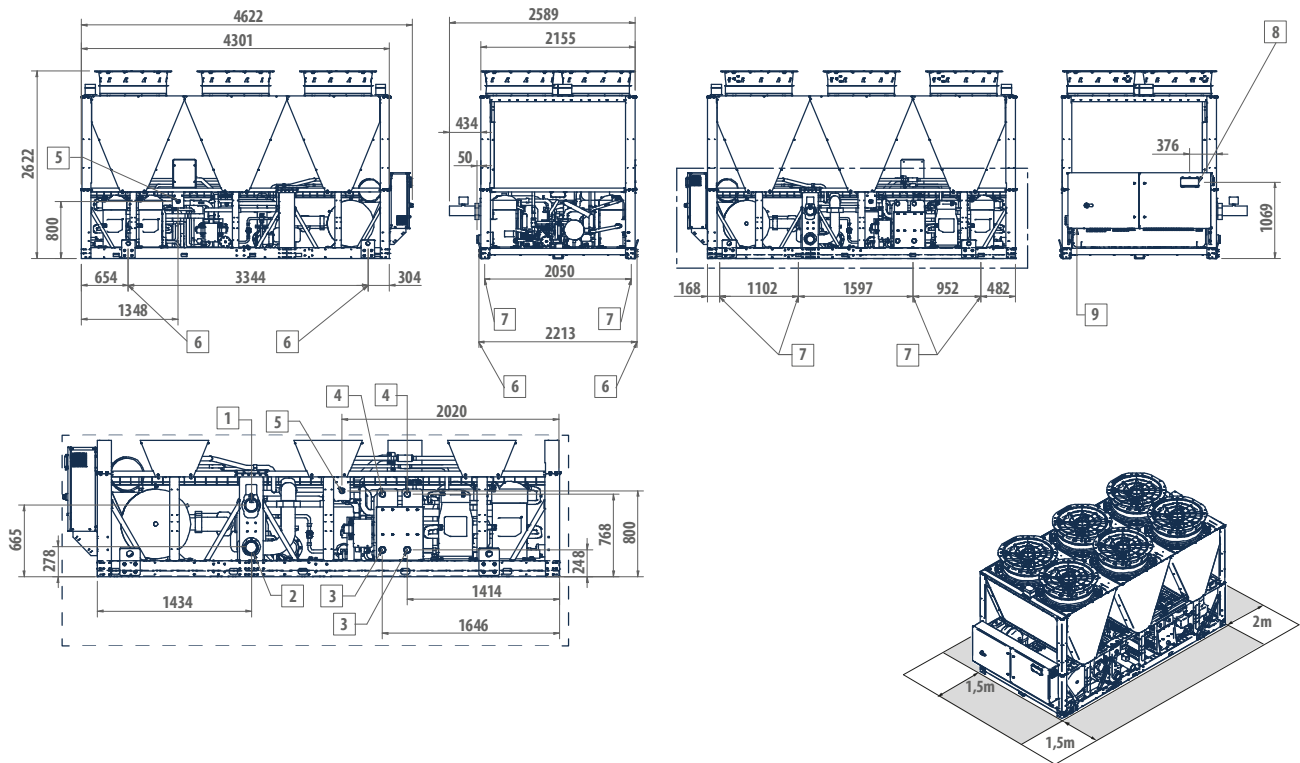
LEGEND

1	Water inlet Victaulic 4"
2	Water outlet Victaulic 4"
3	Heat exchanger inlet 2" M
4	Heat exchanger outlet 2" M
5	Outlet safety valve 1" M
6	Lifting points
7	Vibration dumpers
8	User interface
9	Power supply input

VLS Chillers and HP with Low GWP refrigerant

DIMENSIONAL DRAWINGS

VLS H 344 - 374

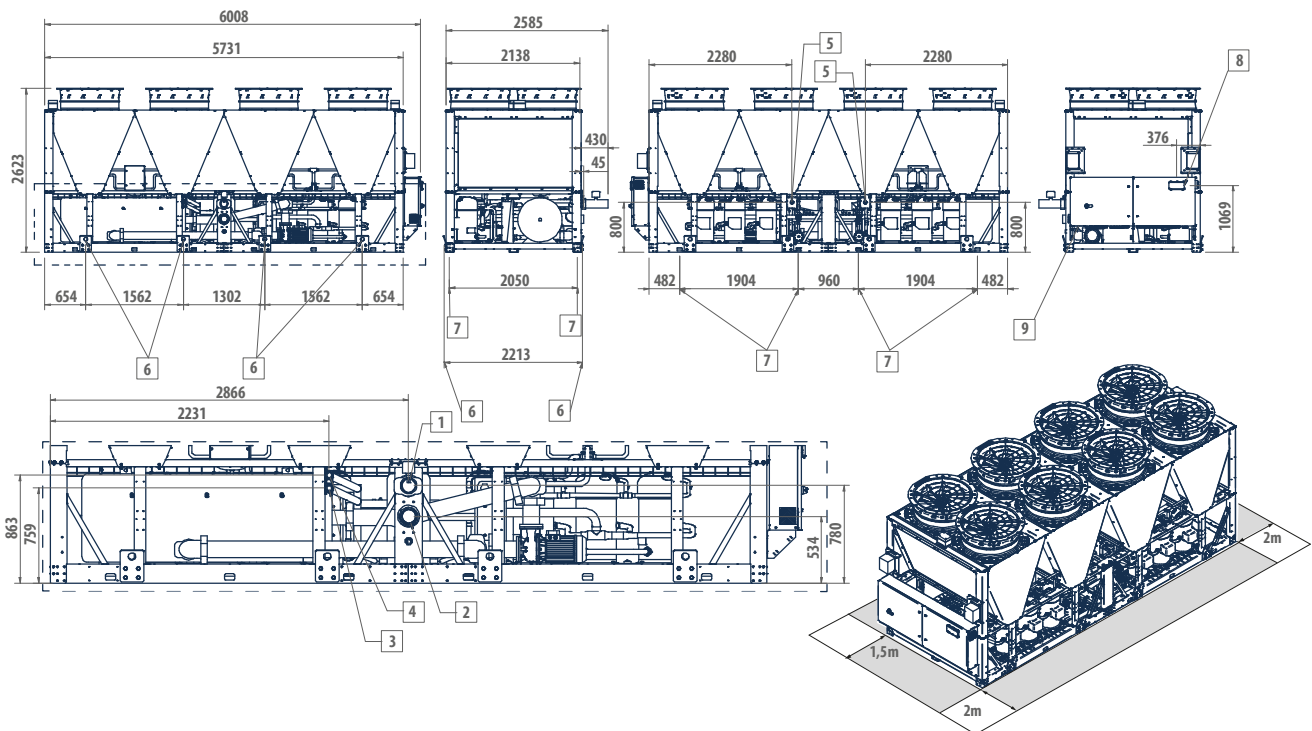


LEGEND

- | | |
|---|----------------------------|
| 1 | Water inlet Victaulic 4" |
| 2 | Water outlet Victaulic 4" |
| 3 | Heat exchanger inlet 2" M |
| 4 | Heat exchanger outlet 2" M |
| 5 | Outlet safety valve 1" M |
| 6 | Lifting points |
| 7 | Vibration dumpers |
| 8 | User interface |
| 9 | Power supply input |

DIMENSIONAL DRAWINGS

VLSC 414 - 456



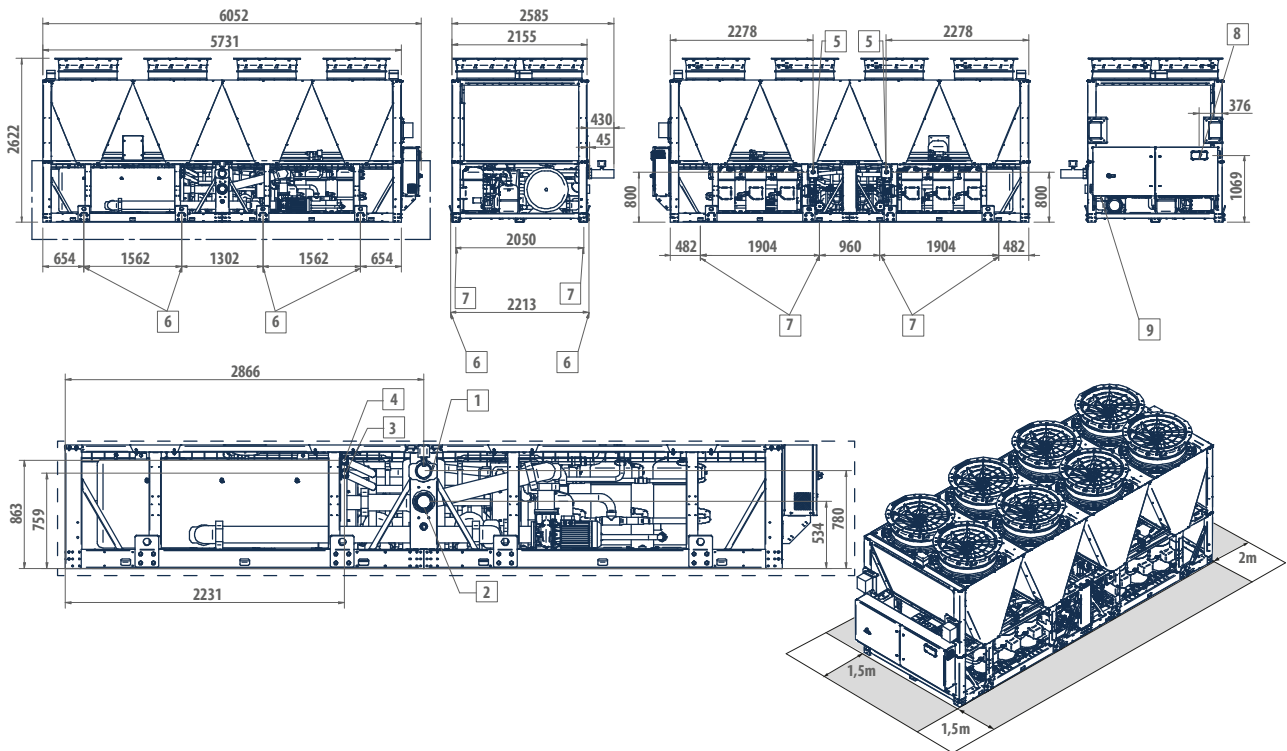
LEGEND

1	Water inlet Victaulic 4"
2	Water outlet Victaulic 4"
3	Heat exchanger inlet 2" M
4	Heat exchanger outlet 2" M
5	Outlet safety valve 1" M
6	Lifting points
7	Vibration dumpers
8	User interface
9	Power supply input

VLS Chillers and HP with Low GWP refrigerant

DIMENSIONAL DRAWINGS

VLS H 414 - 456

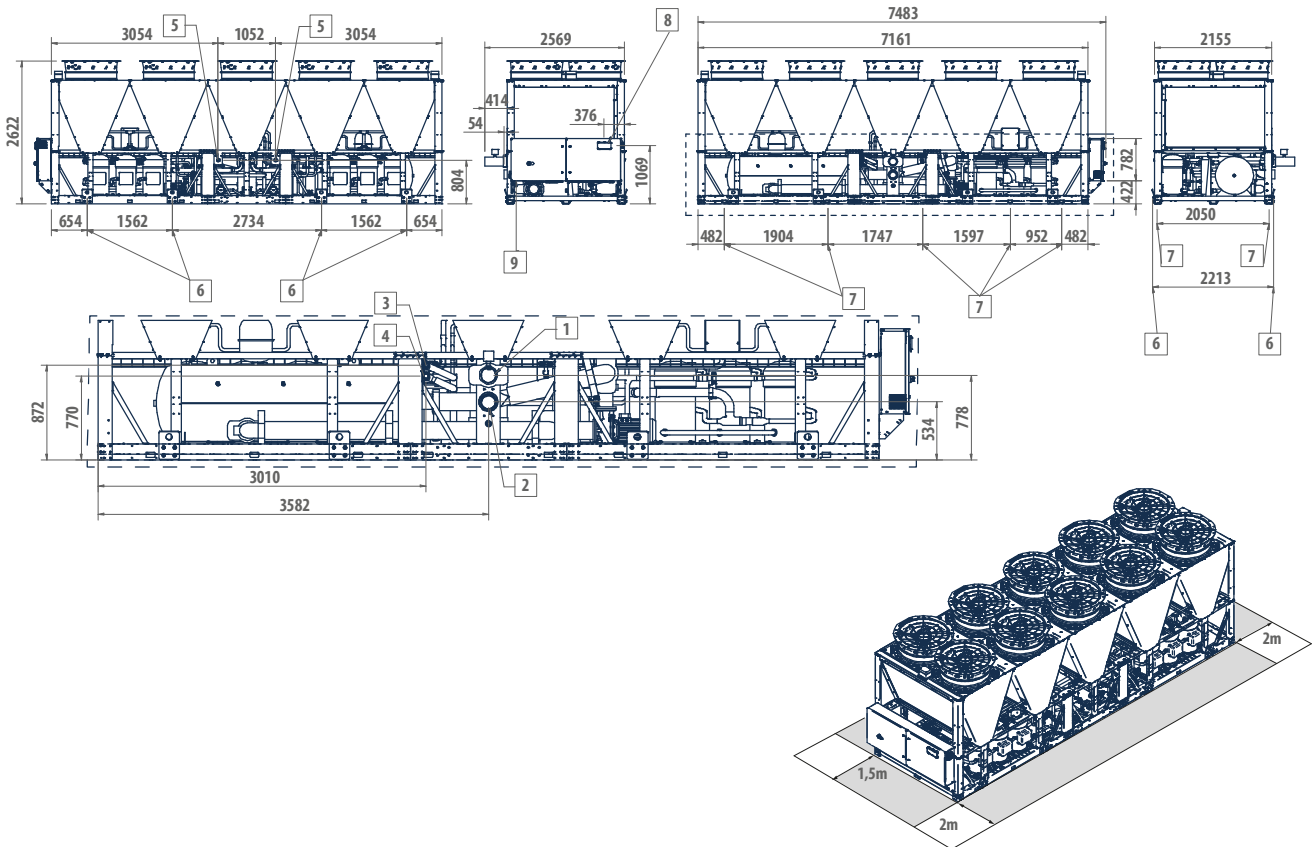


LEGEND

- | | |
|---|----------------------------|
| 1 | Water inlet Victaulic 4" |
| 2 | Water outlet Victaulic 4" |
| 3 | Heat exchanger inlet 2" M |
| 4 | Heat exchanger outlet 2" M |
| 5 | Outlet safety valve 1" M |
| 6 | Lifting points |
| 7 | Vibration dumpers |
| 8 | User interface |
| 9 | Power supply input |

DIMENSIONAL DRAWINGS

VLSC 546 - 576



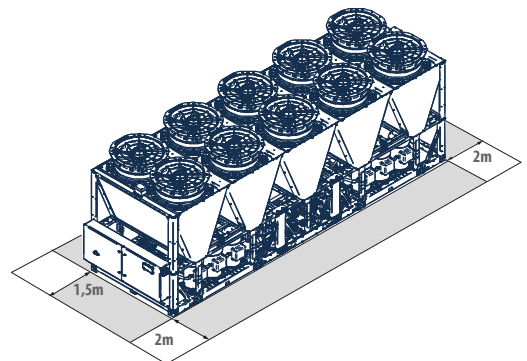
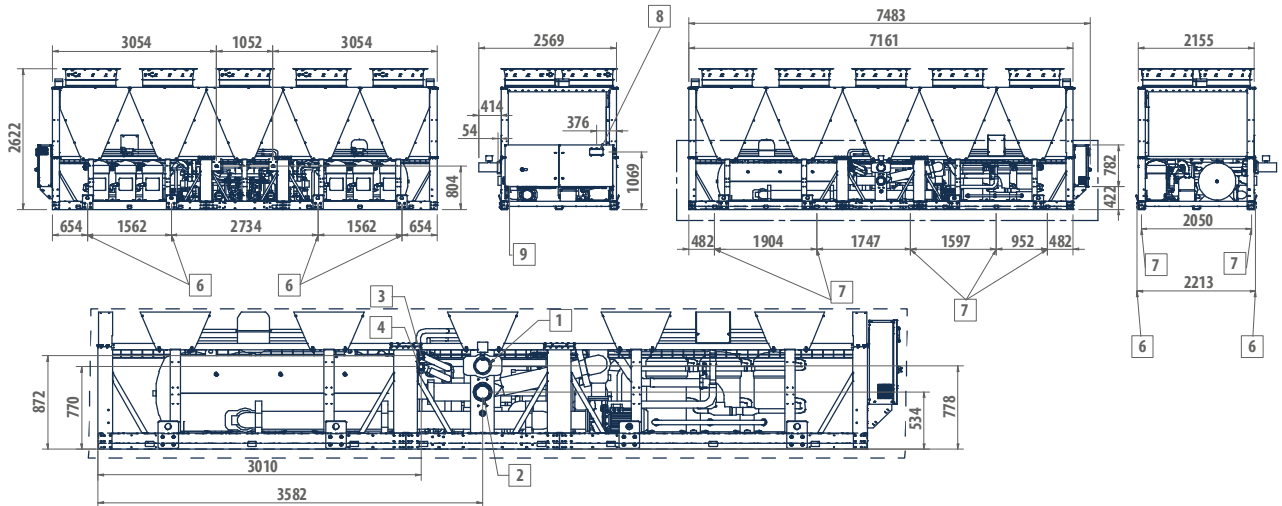
LEGEND

1	Water inlet Victaulic 5"
2	Water outlet Victaulic 5"
3	Heat exchanger inlet 2" M
4	Heat exchanger outlet 2" M
5	Outlet safety valve 1" M
6	Lifting points
7	Vibration dumpers
8	User interface
9	Power supply input

VLS Chillers and HP with Low GWP refrigerant

DIMENSIONAL DRAWINGS

VLS H 546 - 576



LEGEND

- | | |
|---|----------------------------|
| 1 | Water inlet Victaulic 5" |
| 2 | Water outlet Victaulic 5" |
| 3 | Heat exchanger inlet 2" M |
| 4 | Heat exchanger outlet 2" M |
| 5 | Outlet safety valve 1" M |
| 6 | Lifting points |
| 7 | Vibration dumpers |
| 8 | User interface |
| 9 | Power supply input |