AIR-TO-WATER HEAT PUMPS

SHERPA AQUADUE

[S3E]

Size	**4, 6, 8, 10, 12, 14, 16, 12T, 14T, 16T**
Energy class	**A+++**
Type	**dual-circuit split**
Refrigerant	**R32**
DHW Temperature	**75°C**

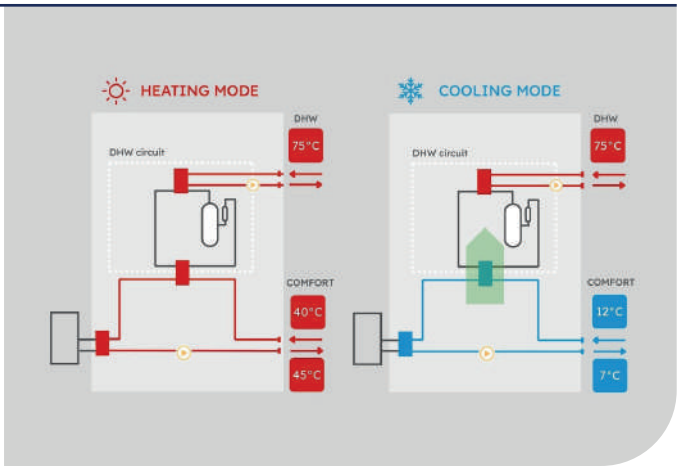
BMS SiOS

Double refrigerantion circuit

It delivers climatic comfort and DHW production simultaneously, without interruption and ensuring continuity in DHW availability, regardless of outdoor conditions. In addition, during cooling operation, the dedicated DHW cycle subtracts heat from the return water from the system, increasing efficiency. Finally, the dual circuit allows DHW to be brought to 75°C without additional generators, avoiding anti-legionella cycles and reducing the volume of the storage tank by up to 30%.

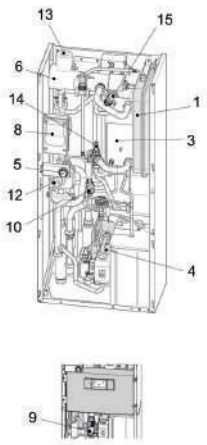
Photovoltaic integration

Thanks to the appropriate contact, it is possible to activate an increase in the heating/DHW temperature and a decrease in the cooling temperature, thereby accumulating thermal energy in the event of overproduction of the photovoltaic system.

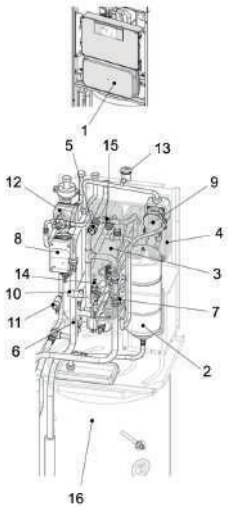


LAYOUT

INDOOR WALL-MOUNTED



TOWER INDOOR UNIT



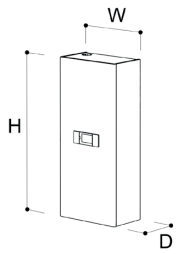
1. Air conditioner circuit expansion tank
2. DHW circuit expansion tank
3. Air conditioning circuit heat exchangers
4. DHW circuit heat exchangers
5. Air conditioning circuit pressure gauge
6. Standard dual-stage electric heating elements (factory disabled) which activate to support the heat pump by configuring the electronic control. Each stage is activated according to the actual thermal power demand.
7. Electric heating elements safety thermostats
8. Air conditioner circuit circulation pump
9. DHW circuit circulation pump
10. Safety valves air conditioner circuit 3 bar
11. Safety valve - DHW circuit 6 bar
12. 3-way valve
13. Automatic air vent valve
14. DHW circuit evaporator water flow rate regulator
15. Flow switches
16. 150L storage tank with a heat exchanger coil surface area of 1.5 m2

- Integrated heating cable (from size 12) to prevent freezing of the water in the bowl: intervenes during machine defrost operations or when the ambient air is below -7°C and stops when it exceeds 4°C

DIMENSIONS AND WEIGHT

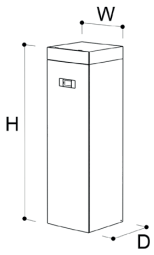
INDOOR WALL-MOUNTED

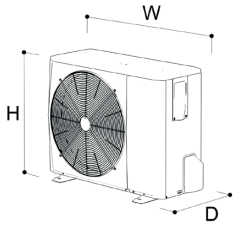
		4	6	8	10	12	14	16	12T	14T	16T
W	mm	500	500	500	500	500	500	500	500	500	500
H	mm	1116	1116	1116	1116	1116	1116	1116	1116	1116	1116
D	mm	288	288	288	288	288	288	288	288	288	288
WEIGHT	kg	**70**	**70**	**70**	**70**	**70**	**70**	**70**	**70**	**70**	**70**



TOWER INDOOR UNIT

		4	6	8	10	12	14	16	12T	14T	16T
W	mm	600	600	600	600	600	600	600	600	600	600
H	mm	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980
D	mm	600	600	600	600	600	600	600	600	600	600
WEIGHT	kg	**171**	**171**	**171**	**171**	**171**	**171**	**171**	**171**	**171**	**171**





EXTERNAL

		4	6	8	10	12	12T	14	14T	16	16T
W	mm	1008	1008	1118	1118	1118	1118	1118	1118	1118	1118
H	mm	712	712	865	865	865	865	865	865	865	865
D	mm	426	426	523	523	523	523	523	523	523	523
WEIGHT	kg	**58**	**58**	**77**	**77**	**96**	**112**	**96**	**112**	**96**	**112**

COMPATIBLE ACCESSORIES

			WALL-MOUNTED	TOWER
INSTALLATION	B0918	Sherpa Flex Box AS kit	≤10	-
	B0961	Sherpa Flex Box AS RAL 9016 kit	≤10	-
	B0931	Remote control display kit 10 m	○	○
HYDRAULICS	B0916	Kit 3-way valve for DHW	●	●
	B0971	Thermostatic mixing valve kit for DHW	-	●
	B0972	Expansion tank kit for DHW	-	●
ELECTRONICS	B0623	Outdoor air temperature probe kit	●	●
	B0624	DHW storage tank sensor kit	●	●
STORAGE TANKS	01804	HE 200 L storage tank	○	-
	01805	HE 300 L storage tank	○	-
	01806	HES 300 L solar storage tank	○	-
	01807	Hybride boiler HY 300 L	○	-
	01808	HYS 300 L solar hybrid storage tank	○	-
	01199	Thermal accumulation 50 L	○	○
	01200	Thermal accumulation 100 L	○	○
RESISTANCES	B0618	Resistance for boiler 2 kW	-	-
	B0666	Resistance for boiler 3 kW	-	-
	B0617	Resistance flange kit	-	-
	AV002	Heat pump startup	▼	▼

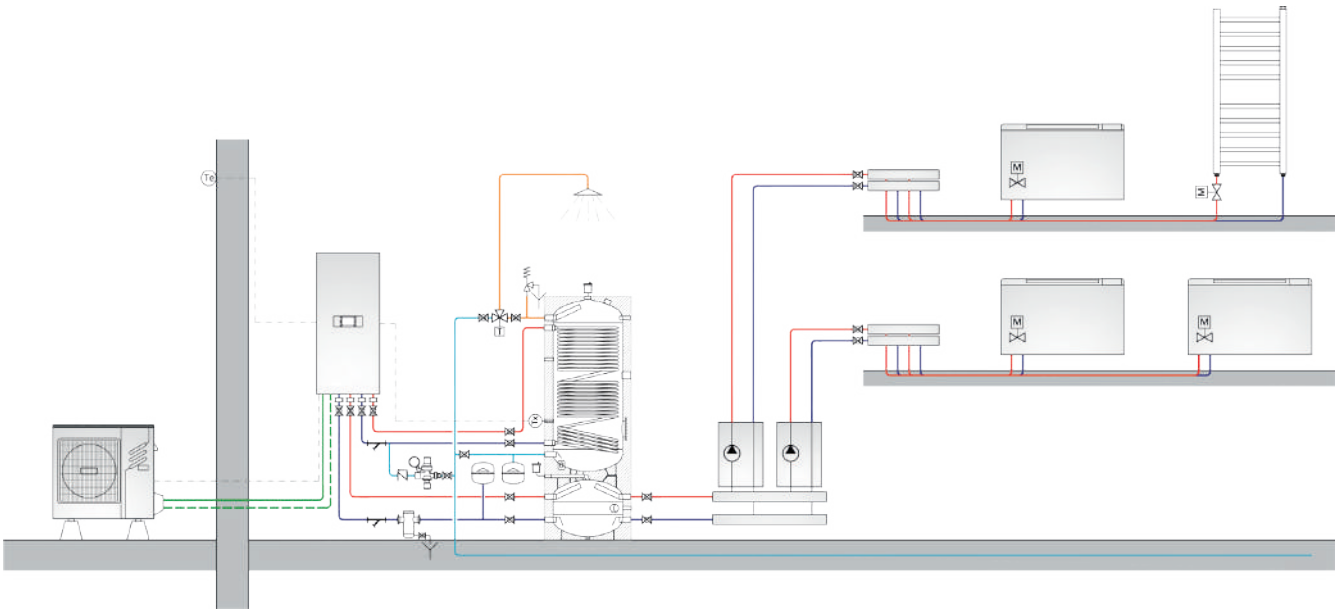
● Standard accessory; ○ Optional accessory; - Incompatible accessory;
▼ Necessary Accessory;

When compatibility is only possible with certain sizes or models, the information is given in the table. Accessory description available at end of chapter.

SYSTEM DIAGRAMS

INDOOR WALL-MOUNTED

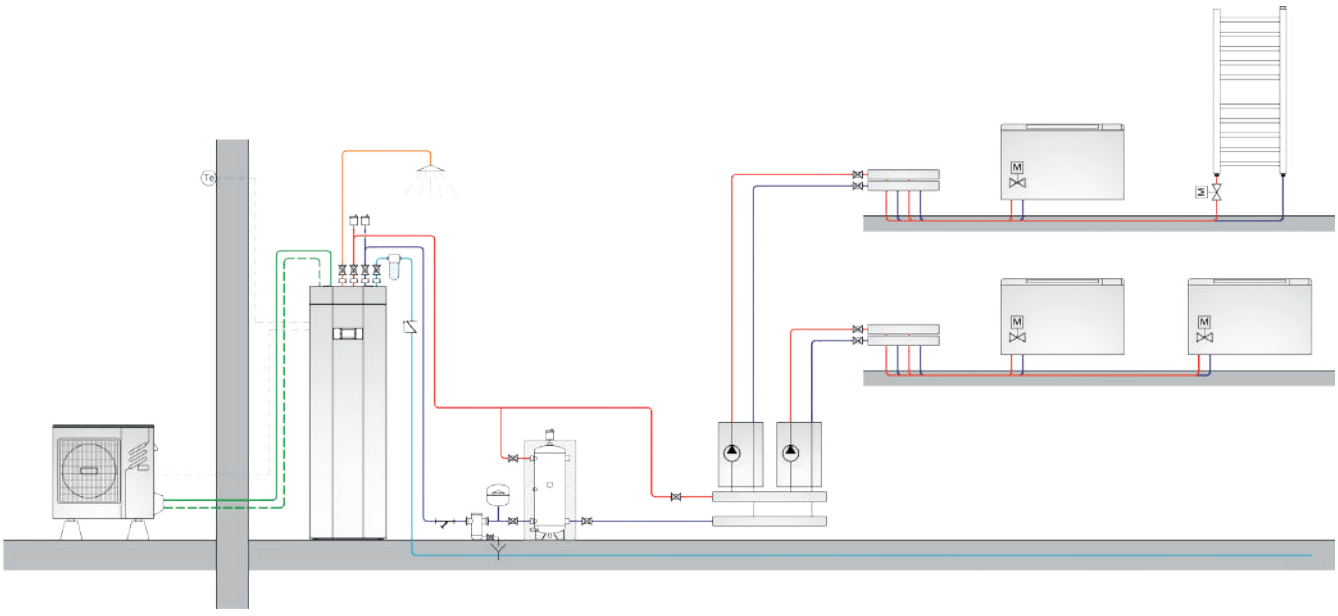
Sherpa Aquadue S3E heat pump (heating and air conditioning; production of high temperature DHW); Bi2 SLR fan coil radiator terminals; example of a two-zone configuration with a simple manifold and integrated inertial buffer tank (used as a hydraulic separator) for the air conditioning system.



Schematic diagram, refer to the installation manual. In particular, the water filtration and treatment system is not shown.

TOWER INDOOR UNIT

Sherpa Aquadue Tower S3E heat pump (heating and air conditioning; production of high temperature DHW); Bi2 SLR fan coil radiator terminals; example of a two-zone configuration with a simple manifold and inertial buffer tank (used as a hydraulic separator) for the air conditioning system.



Schematic diagram, refer to the installation manual. In particular, the water filtration and treatment system is not shown.

TECHNICAL DATA

					4			6			8			10		
	Outdoor unit wall-mounted **Indoor unit wall-mounted** **Indoor unit tower**				02284 02296 02298			02285 02296 02298			02286 02296 02298			02287 02296 02298		
	Compressor frequency				Minimum	Nominal	Maximum	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
PUNCTUAL PERFORMANCE	Heating power	a7/6 - w30/35	(a)	kW	2,42	4,25	5,66	3,53	6,20	8,26	4,73	8,30	11,05	5,70	10,0	13,32
	COP	a7/6 - w30/35	(a)	W/W	-	5,15	-	-	5,00	-	-	5,20	-	-	5,00	-
	Heating power	a2/1 - w30/35	(a)	kW	2,54	4,45	5,93	3,13	5,50	7,32	4,05	7,10	9,46	4,67	8,20	10,92
	COP	a2/1 - w30/35	(a)	W/W	-	4,05	-	-	3,95	-	-	4,10	-	-	4,05	-
	Heating power	a-7/-8 - w30/35	(a)	kW	2,74	4,80	6,39	3,48	6,10	8,12	4,05	7,10	9,46	4,70	8,25	10,99
	COP	a-7/-8 - w30/35	(a)	W/W	-	3,15	-	-	3,05	-	-	3,25	-	-	3,15	-
	Heating power	a-15/-16 - w30/35	(a)	kW	1,75	3,07	4,09	2,15	3,77	5,02	3,31	5,80	7,72	3,48	6,10	8,12
	COP	a-15/-16 - w30/35	(a)	W/W	-	2,88	-	-	2,83	-	-	2,98	-	-	3,01	-
	Heating power (fancoils)	a7/6 - w40/45	(a)	kW	2,48	4,35	5,79	3,62	6,35	8,46	4,67	8,20	10,92	5,70	10,00	13,32
	COP (fancoils)	a7/6 - w40/45	(a)	W/W	-	3,80	-	-	3,75	-	-	3,95	-	-	3,80	-
	Heating power (fancoils)	a2/1 - w40/45	(a)	kW	2,91	5,10	6,79	3,31	5,80	7,72	4,22	7,40	9,86	4,47	7,85	10,45
	COP (fancoils)	a2/1 - w40/45	(a)	W/W	-	3,00	-	-	3,00	-	-	3,25	-	-	3,20	-
	Heating power (fancoils)	a-7/-8 - w40/45	(a)	kW	2,45	4,30	5,73	3,08	5,40	7,19	3,76	6,60	8,79	4,19	7,35	9,79
	COP (fancoils)	a-7/-8 - w40/45	(a)	W/W	-	2,35	-	-	2,40	-	-	2,55	-	-	2,55	-
	Heating power (fancoils)	a-15/-16 - w40/45	(a)	kW	1,52	2,66	3,54	1,86	3,27	4,35	2,87	5,04	6,71	3,03	5,31	7,07
	COP (fancoils)	a-15/-16 - w40/45	(a)	W/W	-	2,02	-	-	1,98	-	-	2,32	-	-	2,34	-
	Cooling power	a35 - w23/18	(a)	kW	2,41	4,50	5,52	3,51	6,55	8,03	4,50	8,40	10,30	5,36	10,00	12,27
	EER	a35 - w23/18	(a)	W/W	-	5,55	-	-	4,90	-	-	5,05	-	-	4,80	-
	Cooling power (fancoils)	a35 - w12/7	(a)	kW	2,52	4,70	5,77	3,75	7,00	8,59	3,97	7,40	9,08	4,40	8,20	10,06
	EER (fancoils)	a35 - w12/7	(a)	W/W	-	3,45	-	-	3,00	-	-	3,38	-	-	3,30	-
EFFICIENCIES	Energy efficiency class in water heating 35°C	Warmer Climate				A+++			A+++			A+++			A+++	
	SCOP	Warmer Climate				6,46			6,57			6,99			7,09	
	ηs (Seasonal efficiency for space heating)	Warmer Climate		ηs %		255,4%			259,8%			276,6%			280,5%	
	Energy efficiency class in water heating 35°C	Average Climate				A+++			A+++			A+++			A+++	
	SCOP	Average Climate				4,85			4,95			5,22			5,20	
	ηs (Seasonal efficiency for space heating)	Average Climate		ηs %		191,0%			195,0%			205,6%			204,8%	
	Energy efficiency class in water heating 35°C	Cold Climate				A++			A++			A++			A++	
	SCOP	Cold Climate				4,06			4,21			4,33			4,32	
	ηs (Seasonal efficiency for space heating)	Cold Climate		ηs %		159,5%			165,3%			170,0%			169,8%	
	Energy efficiency class in water heating 55°C	Warmer Climate				A+++			A+++			A+++			A+++	
	SCOP	Warmer Climate				4,15			4,21			4,51			4,62	
	ηs (Seasonal efficiency for space heating)	Warmer Climate		ηs %		163,1%			165,4%			177,2%			181,7%	
	Energy efficiency class in water heating 55°C	Average Climate				A++			A++			A++			A++	
	SCOP	Average Climate				3,31			3,52			3,37			3,47	
	ηs (Seasonal efficiency for space heating)	Average Climate		ηs %		129,5%			137,9%			131,6%			135,7%	
	Energy efficiency class in water heating 55°C	Cold Climate				A+			A+			A+			A+	
	SCOP	Cold Climate				2,63			2,85			2,88			2,99	
	ηs (Seasonal efficiency for space heating)	Cold Climate		ηs %		102,1%			111,1%			112,1%			116,5%	
NOISE LEVEL	Indoor unit sound power (reg. EU 811-2013/UNI EN 12102:2022)			dB(A)		46/40			46/40			46/42			46/42	
	Indoor unit sound pressure (reg. EU 811-2013/UNI EN 12102:2022)		(b)	dB(A)		38/32			38/32			38/36			38/36	
	Outdoor unit sound power (reg. EU 811-2013/UNI EN 12102:2022)			dB(A)		56/52			58/53			59/54			60/55	
	Outdoor unit sound pressure (reg. EU 811-2013/UNI EN 12102:2022)		(c)	dB(A)		36/32			38/33			39/34			40/35	
ELECTRICAL DATA	System circulator absorption			W		3 - 87			3 - 87			3 - 87			3 - 87	
	Indoor unit power supply			V/ph/Hz		220-240/1/50			220-240/1/50			220-240/1/50			220-240/1/50	
	Maximum current absorbed indoor unit with additional resistors active			A		18,00			18,00			18,00			18,00	
	Maximum power absorbed indoor unit with additional active heating elements			kW		4,05			4,05			4,05			4,05	
	Additional electric heating elements			kW		1,5+1,5			1,5+1,5			1,5+1,5			1,5+1,5	
	Outdoor unit power supply			V/ph/Hz		220-240/1/50			220-240/1/50			220-240/1/50			220-240/1/50	
	Outdoor unit maximum absorbed current			A		10			11			14			16	
	Outdoor unit maximum absorbed power			kW		2,2			2,6			3,3			3,6	
COOLING CIRCUIT	Compressor type					Twin Rotary DC Inverter			Twin Rotary DC Inverter			Twin Rotary DC Inverter			Twin Rotary DC Inverter	
	Refrigerant inlet connection diameter			"		1/4"-5/8"			1/4"-5/8"			3/8"-5/8"			3/8"-5/8"	
	Refrigerant gas		(d)			R32			R32			R32			R32	
	Global warming potential			GWP		675			675			675			675	
	Refrigerant gas charge			kg		1,5			1,5			1,65			1,65	
	Additional charge for lengths over 15m			g/m		20			20			38			38	
	Refrigerant piping length limit	min - max		m		2 - 30			2 - 30			2 - 30			2 - 30	
	Refrigerant piping length limit without minimum surface check according to IEC 60335-2-40:2018	max	(e)	m		30			30			20			20	
HY-DRAULIC DATA	System hydraulic connections			"		1"			1"			1"			1"	
	System expansion valve capacity			l		8			8			8			8	
INTEGRATED DHW BOILER	Load profile according to EN16147					L			L			L			L	
	DHW production energy efficiency class	Average Climate				A			A			A			A	
	ηHW (seasonal production efficiency DHW)	Average Climate		%		106%			106%			86%			86%	
	Boiler volume			l		150			150			150			150	
	Boiler interior surface material					DD12 glazed steel S235JR			DD12 glazed steel S235JR			DD12 glazed steel S235JR			DD12 glazed steel S235JR	
	Heat exchanger in the boiler			m²		1,5			1,5			1,5			1,5	
	Type and thickness of boiler insulation					Hard expanded polyurethane 55 mm			Hard expanded polyurethane 55 mm			Hard expanded polyurethane 55 mm			Hard expanded polyurethane 55 mm	
	Specific dispersion			W/K		2			2			2			2	
	DHW expansion tank capacity			l		7			7			7			7	
	DHW hydraulic connections			"		3/4"			3/4"			3/4"			3/4"	
SECONDARY DHW COOLING CIRCUIT	DHW circuit heating power	w35 - w55	(f)	kW		2,15			2,15			2,15			2,15	
	COP DHW circuit	w35 - w55	(f)	W/W		3,12			3,12			3,12			3,12	
	DHW circuit heating power	w12 - w55	(g)	kW		1,60			1,60			1,60			1,60	
	COP DHW circuit	w12 - w55	(g)	W/W		2,58			2,58			2,58			2,58	
	Sound power indoor unit in heating/cooling + DHW circuit			dB(A)		49			49			49			49	
	DHW circuit circulator absorption			W		3 - 43			3 - 43			3 - 43			3 - 43	
	DHW circuit coolant gas		(h)			R134a			R134a			R134a			R134a	
	DHW circuit global warming potential			GWP		1430			1430			1430			1430	
	DHW circuit coolant gas load			kg		0,35			0,35			0,35			0,35	

(a) aX/Y indicates air temperature (dry bulb X / wet bulb Y) - wA/B indicates water temperature (A inlet / B outlet).
(b) Sound pressure values measured at a distance of 1 m in a semi-anechoic chamber
(c) Sound pressure values measured at a distance of 4 m in free field distance
(d) Non-airtightally sealed equipment containing fluorinated GAS
(q) maximum length of the refrigeration pipes beyond which checks on the minimum surface of the installation rooms are necessary, check the technical manual
(r) Heating circuit water temperature 35°C/Outlet water temperature 55°C
(s) Heating circuit water temperature 12°C/Outlet water temperature 55°C
(t) Non-hermetically sealed equipment containing fluorinated GAS
Energy efficiency classes refer to a range between A+++ and D.

	TECHNICAL DATA				12			14			16		
	Outdoor unit wall-mounted **Indoor unit wall-mounted** **Indoor unit tower**				02288 02297 02299			02289 02297 02299			02290 02297 02299		
	Compressor frequency				Minimum	Nominal	Maximum	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
PUNCTUAL PERFORMANCE	Heating power	a7/6 - w30/35	(a)	kW	5,65	12,10	15,79	6,77	14,50	18,92	7,47	16,00	20,88
	COP	a7/6 - w30/35	(a)	W/W	-	4,95	-	-	4,70	-	-	4,50	-
	Heating power	a2/1 - w30/35	(a)	kW	4,34	9,30	12,14	5,32	11,40	14,88	6,07	13,00	16,96
	COP	a2/1 - w30/35	(a)	W/W	-	3,95	-	-	3,65	-	-	3,50	-
	Heating power	a-7/-8 - w30/35	(a)	kW	4,67	10,00	13,05	5,60	12,00	15,66	6,21	13,3	17,35
	COP	a-7/-8 - w30/35	(a)	W/W	-	3,00	-	-	2,80	-	-	2,70	-
	Heating power	a-15/-16 - w30/35	(a)	kW	3,43	7,35	9,59	3,71	7,94	10,36	4,37	9,35	12,20
	COP	a-15/-16 - w30/35	(a)	W/W	-	2,88	-	-	2,85	-	-	2,66	-
	Heating power (fancoils)	a7/6 - w40/45	(a)	kW	5,74	12,30	16,05	6,63	14,20	18,53	7,47	16,00	20,88
	COP (fancoils)	a7/6 - w40/45	(a)	W/W	-	3,80	-	-	3,65	-	-	3,60	-
	Heating power (fancoils)	a2/1 - w40/45	(a)	kW	5,00	10,70	13,96	5,46	11,70	15,27	5,98	12,80	16,70
	COP (fancoils)	a2/1 - w40/45	(a)	W/W	-	3,00	-	-	2,86	-	-	2,85	-
	Heating power (fancoils)	a-7/-8 - w40/45	(a)	kW	4,76	10,20	13,31	5,51	11,80	15,40	6,02	12,90	16,83
	COP (fancoils)	a-7/-8 - w40/45	(a)	W/W	-	2,40	-	-	2,35	-	-	2,23	-
	Heating power (fancoils)	a-15/-16 - w40/45	(a)	kW	3,10	6,63	8,65	3,34	7,16	9,34	3,93	8,41	10,97
	COP (fancoils)	a-15/-16 - w40/45	(a)	W/W	-	2,32	-	-	2,29	-	-	2,03	-
	Cooling power	a35 - w23/18	(a)	kW	5,60	12,00	14,29	6,31	13,00	16,08	6,96	13,50	17,75
	EER	a35 - w23/18	(a)	W/W	-	4,00	-	-	3,70	-	-	3,61	-
	Cooling power (fancoils)	a35 - w12/7	(a)	kW	5,42	11,60	13,82	5,93	12,70	15,13	6,54	14,00	16,67
	EER (fancoils)	a35 - w12/7	(a)	W/W	-	2,75	-	-	2,55	-	-	2,45	-
EFFICIENCIES	Energy efficiency class in water heating 35°C	Warmer Climate			A+++			A+++			A+++		
	SCOP	Warmer Climate			6,48			6,58			6,47		
	ηs (Seasonal efficiency for space heating)	Warmer Climate		ηs %	256,1%			260,3%			255,6%		
	Energy efficiency class in water heating 35°C	Average Climate			A+++			A+++			A+++		
	SCOP	Average Climate			4,81			4,72			4,62		
	ηs (Seasonal efficiency for space heating)	Average Climate		ηs %	189,4%			185,7%			181,7%		
	Energy efficiency class in water heating 35°C	Cold Climate			A+			A++			A++		
	SCOP	Cold Climate			4,08			4,07			4,02		
	ηs (Seasonal efficiency for space heating)	Cold Climate		ηs %	160,2%			159,6%			157,8%		
	Energy efficiency class in water heating 55°C	Warmer Climate			A+++			A+++			A+++		
	SCOP	Warmer Climate			4,43			4,49			4,48		
	ηs (Seasonal efficiency for space heating)	Warmer Climate		ηs %	174,1%			176,5%			176,1%		
	Energy efficiency class in water heating 55°C	Average Climate			A++			A++			A++		
	SCOP	Average Climate			3,45			3,47			3,41		
	ηs (Seasonal efficiency for space heating)	Average Climate		ηs %	135,1%			135,6%			133,3%		
	Energy efficiency class in water heating 55°C	Cold Climate			A+			A+			A+		
	SCOP	Cold Climate			3,02			3,05			3,12		
	ηs (Seasonal efficiency for space heating)	Cold Climate		ηs %	117,8%			118,9%			121,8%		
NOISE LEVEL	Indoor unit sound power (reg. EU 811-2013/UNI EN 12102:2022)			dB(A)	48/46			48/46			48/46		
	Indoor unit sound pressure (reg. EU 811-2013/UNI EN 12102:2022)		(b)	dB(A)	40/38			40/38			40/38		
	Outdoor unit sound power (reg. EU 811-2013/UNI EN 12102:2022)			dB(A)	64/60			65/62			68/64		
	Outdoor unit sound pressure (reg. EU 811-2013/UNI EN 12102:2022)		(c)	dB(A)	44/40			45/42			48/44		
ELECTRICAL DATA	System circulator absorption			W	8 - 140			8 - 140			8 - 140		
	Indoor unit power supply			V/ph/Hz	220-240/1/50			220-240/1/50			220-240/1/50		
	Maximum current absorbed indoor unit with additional resistors active			A	31,0			31,0			31,0		
	Maximum power absorbed indoor unit with additional active heating elements			kW	7,05			7,05			7,05		
	Additional electric heating elements			kW	3,0+3,0			3,0+3,0			3,0+3,0		
	Outdoor unit power supply			V/ph/Hz	220-240/1/50			220-240/1/50			220-240/1/50		
	Outdoor unit maximum absorbed current			A	23			25			25		
	Outdoor unit maximum absorbed power			kW	5,4			5,7			5,7		
COOLING CIRCUIT	Compressor type				Twin Rotary DC Inverter			Twin Rotary DC Inverter			Twin Rotary DC Inverter		
	Refrigerant inlet connection diameter			"	3/8"-5/8"			3/8"-5/8"			3/8"-5/8"		
	Refrigerant gas		(d)		R32			R32			R32		
	Global warming potential			GWP	675			675			675		
	Global warming potential			GWP	675			-			-		
	Refrigerant gas charge			kg	1,84			1,84			1,84		
	Additional charge for lengths over 15m			g/m	38			38			38		
	Refrigerant piping length limit	min - max		m	2 - 30			2 - 30			2 - 30		
	Refrigerant piping length limit without minimum surface check according to IEC 60335-2-40:2018	max	(e)	m	15			15			15		
H/HYDRAULIC DATA	System hydraulic connections			"	1"			1"			1"		
	System expansion valve capacity			l	8			8			8		
INTEGRATED DHW BOILER	Load profile according to EN16147				L			L			L		
	DHW production energy efficiency class	Average Climate			A			A			A		
	ηHW (seasonal production efficiency DHW)	Average Climate		%	81%			81%			81%		
	Boiler volume			l	150			150			150		
	Boiler interior surface material				DD12 glazed steel S235JR			DD12 glazed steel S235JR			DD12 glazed steel S235JR		
	Heat exchanger in the boiler			m²	1,5			1,5			1,5		
	Type and thickness of boiler insulation				Hard expanded polyurethane 55 mm			Hard expanded polyurethane 55 mm			Hard expanded polyurethane 55 mm		
	Specific dispersion			W/K	2			2			2		
	DHW expansion tank capacity			l	7			7			7		
	DHW hydraulic connections			"	3/4"			3/4"			3/4"		
SECONDARY DHW COOLING CIRCUIT	DHW circuit heating power	w35 - w55	(f)	kW	2,15			2,15			2,15		
	COP DHW circuit	w35 - w55	(f)	W/W	3,12			3,12			3,12		
	DHW circuit heating power	w12 - w55	(g)	kW	1,60			1,60			1,6		
	COP DHW circuit	w12 - w55	(g)	W/W	2,58			2,58			2,58		
	Sound power indoor unit in heating/cooling + DHW circuit			dB(A)	49			49			49		
	DHW circuit circulator absorption			W	3 - 43			3 - 43			3 - 43		
	DHW circuit coolant gas		(h)		R134a			R134a			R134a		
	DHW circuit global warming potential			GWP	1430			1430			1430		
	DHW circuit coolant gas load			kg	0,35			0,35			0,35		

(a) aX/Y indicates air temperature (dry bulb X / wet bulb Y) - wA/B indicates water temperature (A inlet / B outlet).
(b) Sound pressure values measured at a distance of 1 m in a semi-anechoic chamber
(c) Sound pressure values measured at a distance of 4 m in free field distance
(d) Non-airtightally sealed equipment containing fluorinated GAS
(q) maximum length of the refrigeration pipes beyond which checks on the minimum surface of the installation rooms are necessary, check the technical manual
(r) Heating circuit water temperature 35°C/Outlet water temperature 55°C
(s) Heating circuit water temperature 12°C/Outlet water temperature 55°C
(t) Non-hermetically sealed equipment containing fluorinated GAS
Energy efficiency classes refer to a range between A+++ and D.

TECHNICAL DATA

					12T			14T			16T		
Outdoor unit wall-mounted **Indoor unit wall-mounted** **Indoor unit tower**					02291 02297 02299			02292 02297 02299			02293 02297 02299		
Compressor frequency					Minimum	Nominal	Maximum	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
PUNCTUAL PERFORMANCE	**Heating power**	a7/6 - w30/35	(a)	kW	5,65	12,10	15,79	6,77	14,50	18,92	7,47	16,00	20,88
	COP	a7/6 - w30/35	(a)	W/W	-	4,95	-	-	4,70	-	-	4,50	-
	Heating power	a2/1 - w30/35	(a)	kW	4,34	9,30	12,14	5,32	11,40	14,88	6,07	13,00	16,96
	COP	a2/1 - w30/35	(a)	W/W	-	3,95	-	-	3,65	-	-	3,50	-
	Heating power	a-7/-8 - w30/35	(a)	kW	4,67	10,00	13,05	5,60	12,00	15,66	6,21	13,30	17,35
	COP	a-7/-8 - w30/35	(a)	W/W	-	3,00	-	-	2,80	-	-	2,70	-
	Heating power	a-15/-16 - w30/35	(a)	kW	3,43	7,35	9,59	3,71	7,94	10,36	4,37	9,35	12,20
	COP	a-15/-16 - w30/35	(a)	W/W	-	2,88	-	-	2,85	-	-	2,66	-
	Heating power (fancoils)	a7/6 - w40/45	(a)	kW	5,74	12,30	16,05	6,63	14,20	18,53	7,47	16,00	20,88
	COP (fancoils)	a7/6 - w40/45	(a)	W/W	-	3,80	-	-	3,65	-	-	3,60	-
	Heating power (fancoils)	a2/1 - w40/45	(a)	kW	5,00	10,70	13,96	5,46	11,70	15,27	5,98	12,80	16,70
	COP (fancoils)	a2/1 - w40/45	(a)	W/W	-	3,00	-	-	2,86	-	-	2,85	-
	Heating power (fancoils)	a-7/-8 - w40/45	(a)	kW	4,76	10,20	13,31	5,51	11,80	15,40	6,02	12,90	16,83
	COP (fancoils)	a-7/-8 - w40/45	(a)	W/W	-	2,40	-	-	2,35	-	-	2,23	-
	Heating power (fancoils)	a-15/-16 - w40/45	(a)	kW	3,10	6,63	8,65	3,34	7,16	9,34	3,93	8,41	10,97
	COP (fancoils)	a-15/-16 - w40/45	(a)	W/W	-	2,32	-	-	2,29	-	-	2,03	-
	Cooling power	a35 - w23/18	(a)	kW	5,60	12,00	14,29	6,31	13,00	16,08	6,96	13,50	17,75
	EER	a35 - w23/18	(a)	W/W	-	4,00	-	-	3,70	-	-	3,61	-
	Cooling power (fancoils)	a35 - w12/7	(a)	kW	5,42	11,60	13,82	5,93	12,70	15,13	6,54	14,00	16,67
	EER (fancoils)	a35 - w12/7	(a)	W/W	-	2,75	-	-	2,55	-	-	2,45	-
EFFICIENCIES	**Energy efficiency class in water heating 35°C**	Warmer Climate				A+++			A+++			A+++	
	SCOP	Warmer Climate				6,47			6,57			6,28	
	ηs (Seasonal efficiency for space heating)	Warmer Climate		ηs %		255,6%			259,8%			248,1%	
	Energy efficiency class in water heating 35°C	Average Climate				A+++			A+++			A+++	
	SCOP	Average Climate				4,81			4,72			4,62	
	ηs (Seasonal efficiency for space heating)	Average Climate		ηs %		189,3%			185,6%			181,6%	
	Energy efficiency class in water heating 35°C	Cold Climate				A++			A++			A++	
	SCOP	Cold Climate				4,08			4,07			4,02	
	ηs (Seasonal efficiency for space heating)	Cold Climate		ηs %		160,2%			159,6%			157,8%	
	Energy efficiency class in water heating 55°C	Warmer Climate				A+++			A+++			A+++	
	SCOP	Warmer Climate				4,42			4,49			4,47	
	ηs (Seasonal efficiency for space heating)	Warmer Climate		ηs %		173,8%			176,4%			175,9%	
	Energy efficiency class in water heating 55°C	Average Climate				A++			A++			A++	
	SCOP	Average Climate				3,45			3,47			3,41	
	ηs (Seasonal efficiency for space heating)	Average Climate		ηs %		135,1%			135,6%			133,2%	
	Energy efficiency class in water heating 55°C	Cold Climate				A+			A+			A+	
	SCOP	Cold Climate				3,02			3,05			3,12	
	ηs (Seasonal efficiency for space heating)	Cold Climate		ηs %		117,7%			118,9%			121,8%	
NOISE LEVEL	**Indoor unit sound power (reg. EU 811-2013/UNI EN 12102:2022)**			dB(A)		48/46			48/46			48/46	
	Indoor unit sound pressure (reg. EU 811-2013/UNI EN 12102:2022)		(b)	dB(A)		40/38			40/38			40/38	
	Outdoor unit sound power (reg. EU 811-2013/UNI EN 12102:2022)			dB(A)		64/60			65/62			68/64	
	Outdoor unit sound pressure (reg. EU 811-2013/UNI EN 12102:2022)		(c)	dB(A)		44/40			45/42			48/44	
ELECTRICAL DATA	**System circulator absorption**			W		8 - 140			8 - 140			8 - 140	
	Indoor unit power supply			V/ph/Hz		220-240/1/50			220-240/1/50			220-240/1/50	
	Maximum current absorbed indoor unit with additional resistors active			A		31,0			31,0			31,0	
	Maximum power absorbed indoor unit with additional active heating elements			kW		7,05			7,05			7,05	
	Additional electric heating elements			kW		3,0+3,0			3,0+3,0			3,0+3,0	
	Outdoor unit power supply			V/ph/Hz		380-415/3/50			380-415/3/50			380-415/3/50	
	Outdoor unit maximum absorbed current			A		8			8			8	
	Outdoor unit maximum absorbed power			kW		5,4			5,7			5,7	
COOLING CIRCUIT	**Compressor type**					Twin Rotary DC Inverter			Twin Rotary DC Inverter			Twin Rotary DC Inverter	
	Refrigerant inlet connection diameter			"		3/8"-5/8"			3/8"-5/8"			3/8"-5/8"	
	Refrigerant gas		(d)			R32			R32			R32	
	Global warming potential			GWP		675			675			675	
	Refrigerant gas charge			kg		1,84			1,84			1,84	
	Additional charge for lengths over 15m			g/m		38			38			38	
	Refrigerant piping length limit	min - max		m		2 - 30			2 - 30			2 - 30	
	Refrigerant piping length limit without minimum surface check according to IEC 60335-2-40:2018	max	(e)	m		15			15			15	
HY-DRAULIC DATA	**System hydraulic connections**			"		1"			1"			1"	
	System expansion valve capacity			l		8			8			8	
INTEGRATED DHW BOILER	**Load profile according to EN16147**					L			L			L	
	DHW production energy efficiency class	Average Climate				A			A			A	
	ηHW (seasonal production efficiency DHW)	Average Climate		%		81%			81%			81%	
	Boiler volume			l		150			150			150	
	Boiler interior surface material					DD12 glazed steel S235JR			DD12 glazed steel S235JR			DD12 glazed steel S235JR	
	Heat exchanger in the boiler			m²		1,5			1,5			1,5	
	Type and thickness of boiler insulation					Hard expanded polyurethane 55 mm			Hard expanded polyurethane 55 mm			Hard expanded polyurethane 55 mm	
	Specific dispersion			W/K		2			2			2	
	DHW expansion tank capacity			l		7			7			7	
	DHW hydraulic connections			"		3/4"			3/4"			3/4"	
SECONDARY DHW COOLING CIRCUIT	**DHW circuit heating power**	w35 - w55	(f)	kW		2,15			2,15			2,15	
	COP DHW circuit	w35 - w55	(f)	W/W		3,12			3,12			3,12	
	DHW circuit heating power	w12 - w55	(g)	kW		1,6			1,6			1,6	
	COP DHW circuit	w12 - w55	(g)	W/W		2,58			2,58			2,58	
	Sound power indoor unit in heating/cooling + DHW circuit			dB(A)		49			49			49	
	DHW circuit circulator absorption			W		3 - 43			3 - 43			3 - 43	
	DHW circuit coolant gas		(h)			R134a			R134a			R134a	
	DHW circuit global warming potential			GWP		1430			1430			1430	
	DHW circuit coolant gas load			kg		0,35			0,35			0,35	

(a) aX/Y indicates air temperature (dry bulb X / wet bulb Y) - wA/B indicates water temperature (A inlet / B outlet).
(b) Sound pressure values measured at a distance of 1 m in a semi-anechoic chamber
(c) Sound pressure values measured at a distance of 4 m in free field distance
(d) Non-airtightally sealed equipment containing fluorinated GAS
(q) maximum length of the refrigeration pipes beyond which checks on the minimum surface of the installation rooms are necessary, check the technical manual
(r) Heating circuit water temperature 35°C/Outlet water temperature 55°C
(s) Heating circuit water temperature 12°C/Outlet water temperature 55°C
(t) Non-hermetically sealed equipment containing fluorinated GAS
Energy efficiency classes refer to a range between A+++ and D.

Aquadue technology

Innovation that ensures simultaneous air conditioning and domestic hot water up to 75°C, avoiding interruptions, improving comfort, and increasing energy efficiency, thanks to heat recovery

Double refrigerantion circuit

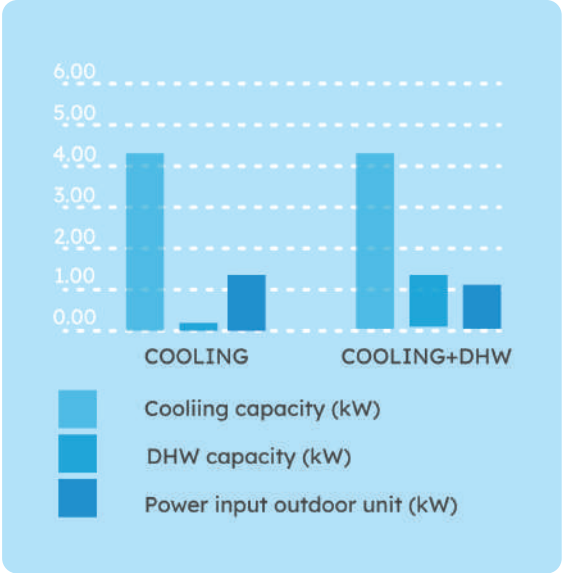
Sherpa Aquadue by Olimpia Splendid is a range of multi-purpose split air-to-water heat pumps for residential applications, which stands out for its patented dual cooling circuit, which improves comfort and increases efficiency.

Sherpa Aquadue allows for cooling in summer, heating in winter and DHW production at the same time: a feature that not only avoids interruptions in the delivery of indoor comfort, but also makes it possible to recover energy during summer cooling, increasing overall system efficiency. Sherpa Aquadue can also heat the DHW up to 75°C independently, without the use of electric heating elements or auxiliary generators (such as boilers or solar thermal systems).

Cooling and DHW production with energy recovery

During summer operation in cooling mode, the cycle dedicated to the production of DHW extracts heat from the water returning from the system circuit. The building's cooling demand is partially met by the DHW cycle, and the comfort refrigeration cycle must deliver less power, reducing the speed of the inverter compressor.

The heat removed from the system is recovered to produce domestic hot water, increasing the efficiency of the integrated system (ratio between energy produced and electricity drawn from the grid).



Domestic hot water at 75°C

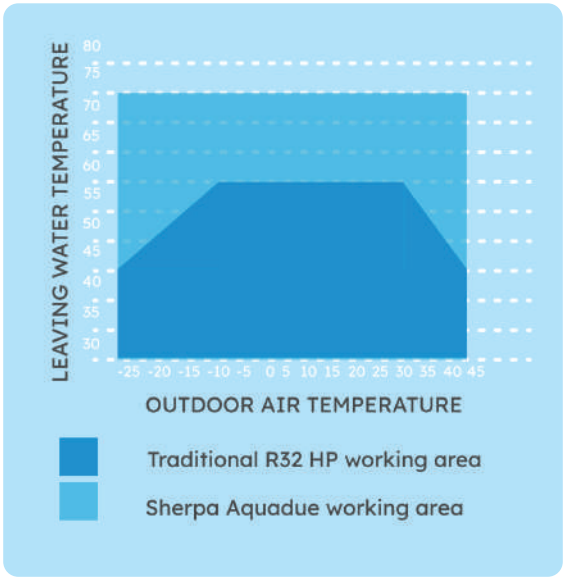
The possibility of storing DHW at high temperatures, in turn, makes it possible to avoid the periodic use of anti-legionella cycles (with their peaks in energy absorption) and to reduce the storage tank volume by up to 30% for the same amount of deliverable DHW, thus reducing overall space requirements.

It should be noted that the potential of this technology multiplies in the presence of a photovoltaic system: all Sherpa Aquadue heat pumps are indeed equipped with a contact that allows increased self-consumption of energy produced by the photovoltaic system, storing surplus energy and reducing the amount of electricity purchased from the grid, even when solar irradiation is absent.

Performance and energy benefits

In adverse weather conditions, traditional heat pumps reduce their thermal output, producing water at a lower temperature. Sherpa Aquadue, in addition to extending the operating range, guarantees constant thermal output for the production of DHW.

The dual cooling circuit makes it possible to achieve higher DHW production temperatures, independent of the outdoor air temperature, thanks to the water-to-water circuit.



		4			6			8			10		
		Cooling w7 - a35	DHW w65 - w12	Cooling w7 - A35 ACS w65 - w12	Cooling w7 - a35	DHW w65 - w12	Cooling w7 - A35 ACS w65 - w12	Cooling w7 - a35	DHW w65 - w12	Cooling w7 - A35 ACS w65 - w12	Cooling w7 - a35	DHW w65 - w12	Cooling w7 - A35 ACS w65 - w12
First circuit + second circuit data	Cooling capacity	4,70	0,64	4,70	7,00	0,64	7,00	7,40	0,64	7,40	8,20	0,64	8,20
	DHW yield	0,00	1,28	1,28	0,00	1,28	1,28	0,00	1,28	1,28	0,00	1,28	1,28
	Absorption	1,36	0,56	1,17	2,33	0,56	2,00	2,19	0,56	1,87	2,48	0,56	2,13
	EER COP	3,45	2,30	4,03	3,00	2,30	3,50	3,38	2,30	3,95	3,30	2,30	3,85

		12			14			16		
		Cooling w7 - a35	DHW w65 - w12	Cooling w7 - A35 ACS w65 - w12	Cooling w7 - a35	DHW w65 - w12	Cooling w7 - A35 ACS w65 - w12	Cooling w7 - a35	DHW w65 - w12	Cooling w7 - A35 ACS w65 - w12
First circuit + second circuit data	Cooling capacity	11,60	0,64	11,60	12,70	0,64	12,70	14,00	0,64	14,00
	DHW yield	0,00	1,28	1,28	0,00	1,28	1,28	0,00	1,28	1,28
	Absorption	4,22	0,56	3,61	4,98	0,56	4,26	5,71	0,56	4,89
	EER COP	2,75	2,30	3,21	2,55	2,30	2,98	2,45	2,30	2,86

		12T			14T			16T		
		Cooling w7 - a35	DHW w65 - w12	Cooling w7 - A35 ACS w65 - w12	Cooling w7 - a35	DHW w65 - w12	Cooling w7 - A35 ACS w65 - w12	Cooling w7 - a35	DHW w65 - w12	Cooling w7 - A35 ACS w65 - w12
First circuit + second circuit data	Cooling capacity	11,60	0,64	11,60	12,70	0,64	12,70	14,00	0,64	14,00
	DHW yield	0,00	1,28	1,28	0,00	1,28	1,28	0,00	1,28	1,28
	Absorption	4,22	0,56	3,61	4,98	0,56	4,26	5,71	0,56	4,89
	EER COP	2,75	2,30	3,21	2,55	2,30	2,98	2,45	2,30	2,86