

# SHERPA AQUADUE



Compatible with:  
**SIOS**  
CONTROL

## Multi-purpose split heat pumps, suspended and tower versions



### DHW AND COMFORT AT THE SAME TIME

The two interconnected refrigerator cycles allow the decoupling of the heating/cooling from the DHW production, enabling them to operate in parallel, avoiding thus interruptions in the domestic comfort supply.



### DOMESTIC HOT WATER UP TO 75°C

The storage of DHW at high temperature makes it possible to reduce the volume of the storage tank by up to 30%, and to avoid energy-intensive consumption of the anti-Legionnaire's disease cycles, since they are normally carried out by the use of electric heating elements.



### LOW GWP GAS

In sizes up to 10 kW, it uses the R32 refrigerant, characterised by greater efficiency and a greenhouse effect reduced by almost 70% (compared to R410A).



## FEATURES

- **Inverter air-water heat pump**
- **Energy efficiency class** in average climate heating up to: A+++ (35°C) and A++ (55°C)
- **Powers available:** 4 Powers with refrigerant R32 (4-6-8-10 kW single-phase) and 3 Powers with refrigerant R410A (12-14-16 kW single-phase and three-phase).
- **Production of DHW** (Domestic Hot Water) at high temperature, up to 75°C.
- **DHW management:** a water/water heat pump unit integrated in the internal unit supplies domestic hot water at high temperature regardless of the external climatic conditions.
- **Absolute continuity availability of DHW:** guaranteed by the redundancy of the dual cooling cycle system
- **Anti-legionella cycles that can be avoided** using the high temperature refrigeration cycle.
- **Double stage electric heating elements as standard:** activation of single or double heating element to support the heat pump by means of a simple electronic control configuration. Each stage is activated according to the actual

need for thermal power, in order to optimise electricity consumption (supplied disabled by default).

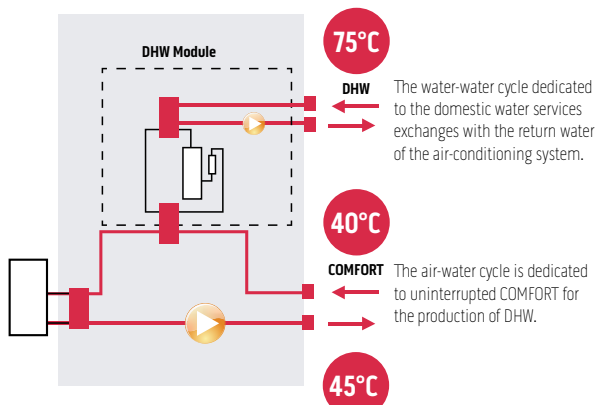
- **Configurable set points:** two set points in cooling, Three set points in heating (one of which for DHW): the set points can also be selected via remote contact.
- **Holiday** and weekly programmer: heating/cooling, DHW, night-time.
- **Climatic curves** with external air temperature probe: two curves available, one for cooling and one for heating. The climatic curves are used to vary the temperature of the water supplying the system according to the external climatic conditions, adjusting the thermal needs of the building, in order to achieve energy savings.
- **Refrigerant gases:** R32\* or R410A\* for the reversible circuit dedicated to air conditioning and R134a\*\* for the high temperature circuit dedicated to the production of DHW.
- **Built-in 150 L high efficiency storage tank** (tower version) with an exchange battery surface equal to 1.5 m<sup>2</sup>.

## AQUADUE TECHNOLOGY

### HEATING MODE

+DHW at high temperature

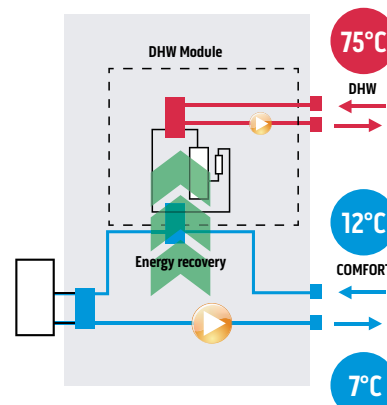
Production of DHW guaranteed regardless of the outside temperature for optimal operation all year round, not guaranteed by traditional heat pumps.



### COOLING MODE

+DHW at a high temperature with energy recovery

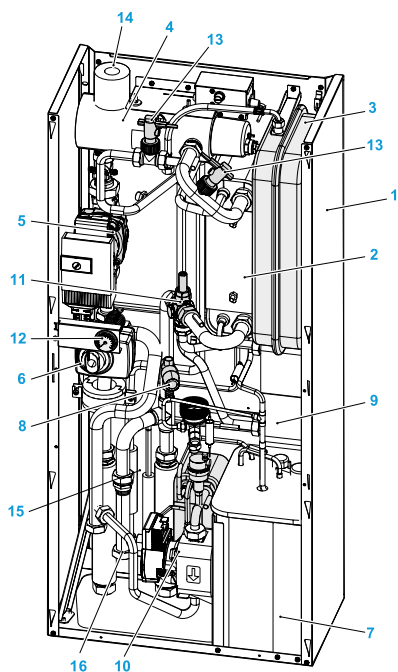
The energy normally dissipated outside is recovered and used to produce DHW up to 75°C.



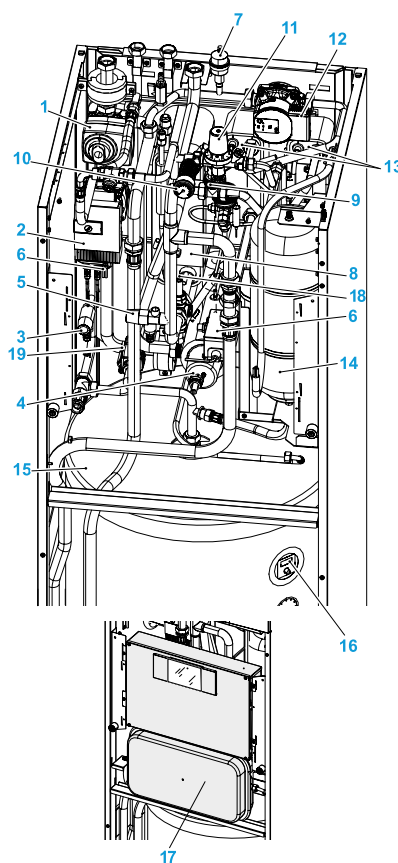
\* Equipment not hermetically sealed containing fluorinated gases with an equivalent GWP of 675 (R32) and 2088 (R410A)

\*\* Non-hermetically sealed equipment containing fluorinated gas with GWP equivalent 1430

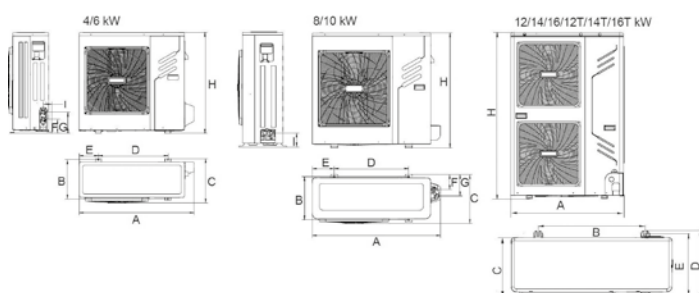
**LAYOUT, DIMENSIONS, WEIGHT**



1. Support structure
2. System primary circuit heat exchanger
3. System circuit expansion vessel
4. Electric heating elements manifold
5. Primary circuit electronic circulation pump
6. 3-way valve
7. DHW circuit compressor
8. DHW circuit expansion valve
9. DHW circuit heat exchanger
10. DHW circuit electronic circulation pump
11. Flow regulator
12. Pressure gauge
13. Flow switch
14. Automatic safety vent
15. Refrigeration connections
16. Hydraulic connections (system and external storage tank)

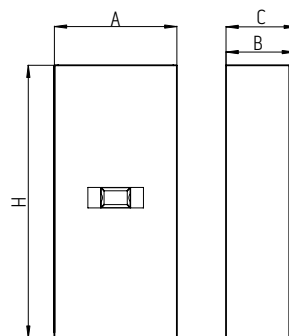


1. 3-way valve
2. Air conditioner circuit circulation pump
3. Safety valves (DHW circuit 6 bar)
4. Post-heating electric heating element manifold
5. Safety valves air conditioner circuit 3 bar
6. Electric heating elements safety thermostats
7. Automatic air vent valves
8. Air conditioner circuit heat exchanger
9. Flow switches
10. Air conditioning circuit pressure gauge
11. DHW circuit filling unit
12. DHW circuit circulation pump
13. DHW circuit heat exchangers
14. DHW circuit expansion tank
15. DHW tank
16. Anode tester
17. Air conditioner circuit expansion tank
18. Regulator of evaporator water flow rate
19. DHW thermostatic accumulators



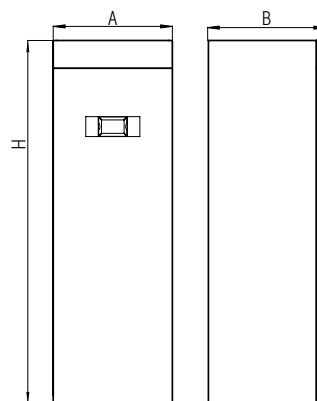
**Suspended indoor units**

		4	6	8	10	12	14	16	12T	14T	16T
		SMALL					BIG				
A	mm	500	500	500	500	500	500	500	500	500	500
B	mm	280	280	280	280	280	280	280	280	280	280
C	mm	288	288	288	288	288	288	288	288	288	288
H	mm	1116	1116	1116	1116	1116	1116	1116	1116	1116	1116
Weight	kg	70	70	70	70	72	72	72	72	72	72



**Tower indoor units**

		4	6	8	10	12	14	16	12T	14T	16T
		SMALL					BIG				
A	mm	600	600	600	600	600	600	600	600	600	600
B	mm	600	600	600	600	600	600	600	600	600	600
H	mm	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980
Weight	kg	171	171	171	171	173	173	173	173	173	173



**Outdoor units**

		4	6	8	10	12	14	16	12T	14T	16T
		MONOFAN					BI-FAN				
A	mm	974	974	1075	1075	900	900	900	900	900	900
B	mm	333	333	363	363	600	600	600	600	600	600
C	mm	378	378	411	411	348	348	348	348	348	348
D	mm	590	590	625	625	400	400	400	400	400	400
E	mm	164	164	184	184	360	360	360	360	360	360
F	mm	119	119	126	126	-	-	-	-	-	-
G	mm	179	179	179	179	-	-	-	-	-	-
H	mm	857	857	965	965	1327	1327	1327	1327	1327	1327
I	mm	75	75	117	117	-	-	-	-	-	-
Weight	kg	57	57	67	67	99	99	99	115	115	115

**SINGLE-PHASE R32 TECHNICAL DATA**

				4			6			8			10				
ODU Sherpa S2 E				02001			02002			02003			02004				
IDU Sherpa Aquadue S2 E				02042			02042			02042			02042				
IDU Sherpa Aquadue Tower S2 E				02044			02044			02044			02044				
Compressor frequency				Minimum	Nominal	Maximum	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum		
PRECISE PERFORMANCE	Heating output	a7/6 - w30/35	(a)	kW	2.08	4.2	5.59	3.22	6.5	8.66	4.17	8.4	11.19	4.96	10	13.32	
	COP	a7/6 - w30/35	(a)	W/W	-	5.15	-	-	4.85	-	-	4.85	-	-	4.65	-	
	Heating output	a2/1 - w30/35	(b)	kW	2.08	4.25	5.38	2.74	5.58	7.06	3.48	7.1	8.99	4.04	8.25	10.44	
	COP	a2/1 - w30/35	(b)	W/W	-	3.9	-	-	3.88	-	-	3.88	-	-	3.6	-	
	Heating output	a-7/-8 - w30/35	(c)	kW	2.23	4.8	5.23	2.79	6	6.53	3.28	7.05	7.67	3.81	8.2	8.93	
	COP	a-7/-8 - w30/35	(c)	W/W	-	3	-	-	2.94	-	-	3.04	-	-	2.95	-	
	Heating output	a-15/-16 - w30/35	(d)	kW	2.17	4.67	5.08	2.26	4.86	5.29	3.25	6.99	7.61	3.25	6.99	7.61	
	COP	a-15/-16 - w30/35	(d)	W/W	-	2.3	-	-	2.27	-	-	2.34	-	-	2.34	-	
	Heating output (fancoils)	a7/6 - w40/45	(f)	kW	2.08	4.2	5.59	3.15	6.35	8.46	3.99	8.05	10.72	4.89	9.85	13.12	
	COP (fancoils)	a7/6 - w40/45	(f)	W/W	-	3.65	-	-	3.64	-	-	3.73	-	-	3.62	-	
	Heating output (fancoils)	a2/1 - w40/45	(g)	kW	2.11	4.3	5.44	2.77	5.65	7.15	3.68	7.5	9.49	3.9	7.95	10.06	
	COP (fancoils)	a2/1 - w40/45	(g)	W/W	-	3.05	-	-	3.02	-	-	3.15	-	-	3.04	-	
	Heating output (fancoils)	a-7/-8 - w40/45	(h)	kW	1.93	4.15	4.52	2.56	5.5	5.99	3.09	6.65	7.24	3.63	7.8	8.49	
	COP (fancoils)	a-7/-8 - w40/45	(h)	W/W	-	2.39	-	-	2.42	-	-	2.45	-	-	2.41	-	
	Heating output (fancoils)	a-15/-16 - w40/45	(i)	kW	1.92	4.14	4.51	2	4.31	4.69	2.81	6.05	6.59	2.81	6.05	6.59	
	COP (fancoils)	a-15/-16 - w40/45	(i)	W/W	-	1.79	-	-	1.77	-	-	1.92	-	-	1.92	-	
	Cooling power	a35 - w23/18	(l)	kW	2.31	4.3	5.27	3.46	6.45	7.91	4.48	8.35	10.24	5.47	10.2	12.51	
	EER	a35 - w23/18	(l)	W/W	-	5.6	-	-	4.88	-	-	4.67	-	-	4.25	-	
	Cooling output (fancoils)	a35 - w12/7	(m)	kW	2.41	4.5	5.52	3.49	6.5	7.97	3.96	7.38	9.05	4.37	8.15	10	
	EER (fancoils)	a35 - w12/7	(m)	W/W	-	3.32	-	-	2.95	-	-	3.02	-	-	2.95	-	
	EFFICIENCIES	Energy efficiency class in water heating 35°C	Warmer Climate			A+++			A+++			A+++			A+++		
		SCOP	Warmer Climate			6.52			6.52			6.69			6.69		
		s (Seasonal efficiency for space heating)	Warmer Climate	ηs %		257.7			257.7			264.6			264.6		
		Energy efficiency class in water heating 35°C	Average Climate			A+++			A+++			A+++			A+++		
SCOP		Average Climate			4.77			4.77			4.79			4.79			
s (Seasonal efficiency for space heating)		Average Climate	ηs %		187.7			187.7			188.5			188.5			
Energy efficiency class in water heating 35°C		Cold Climate			A++			A++			A++			A++			
SCOP		Cold Climate			4.06			4.06			4.01			4.01			
s (Seasonal efficiency for space heating)		Cold Climate	ηs %		159.5			159.5			157.5			157.5			
Energy efficiency class in water heating 55°C		Warmer Climate			A+++			A+++			A+++			A+++			
SCOP		Warmer Climate			4.28			4.28			4.29			4.29			
s (Seasonal efficiency for space heating)		Warmer Climate	ηs %		168.2			168.2			168.5			168.5			
Energy efficiency class in water heating 55°C		Average Climate			A++			A++			A++			A++			
SCOP		Average Climate			3.34			3.34			3.28			3.28			
s (Seasonal efficiency for space heating)		Average Climate	ηs %		130.6			130.6			128.0			128.0			
Energy efficiency class in water heating 55°C		Cold Climate			A+			A+			A+			A+			
SCOP		Cold Climate			2.77			2.77			2.66			2.66			
s (Seasonal efficiency for space heating)		Cold Climate	ηs %		107.9			107.9			103.5			103.5			
NOISE LEVEL		Indoor unit sound power			dB(A)	41			41			41			41		
		Indoor unit sound pressure	(n)		dB(A)	35			35			35			35		
		Outdoor unit sound power (nominal)			dB(A)	61			62			63			65		
		Outdoor unit sound pressure (nominal)	(o)		dB(A)	38			39			40			42		
		System circulator absorption			W	3 - 87			3 - 87			3 - 87			3 - 87		
		Supply voltage indoor unit			V/ph/Hz	220-240/1/50			220-240/1/50			220-240/1/50			220-240/1/50		
	Electrical data Maximum current absorbed indoor unit with additional active heating elements			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			
	Supply voltage outdoor unit			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	14			14			19			19			
	Outdoor unit maximum absorbed power			kW	2.65			2.65			3.8			3.8			
	Compressor type				Twin Rotary DC Inverter 4 poles			Twin Rotary DC Inverter 4 poles			Twin Rotary DC Inverter 6 poles			Twin Rotary DC Inverter 6 poles			
	Refrigerant inlet connection diameter			"	1/4"-5/8"			1/4"-5/8"			3/8"-5/8"			3/8"-5/8"			
	Coolant gas		(p)		R32			R32			R32			R32			
	Global warming potential			GWP	675			675			675			675			
	Refrigerant gas charge			kg	1.55			1.55			1.65			1.65			
	Refrigerant piping length limit			min - max	2 - 29			2 - 29			2 - 30			2 - 30			
	Refrigerant piping length limit without minimum surface check according to IEC 60335-2-40:2018		(q)	max	29			29			20			20			
	Drinking water - DHW hydraulic connections			"	1"			1"			1"			1"			
	System expansion valve capacity			l	8			8			8			8			
	Load profile according to EN16147			L	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"				
DHW circuit heating capacity	w35 - w55	(r)	kW	2.15			2.15			2.15			2.15				
COP DHW circuit	w35 - w55	(r)	W/W	3.12			3.12			3.12			3.12				
DHW circuit heating capacity	w12 - w55	(s)	kW	1.6			1.6			1.6			1.6				
COP DHW circuit	w12 - w55	(s)	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		(t)		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				

ONLY FOR SHERPA AQUADUE TOWER S2

(a) Heating mode, external air temperature 7°C b.s./6°C b.u., inlet/outlet water temperature 30°C/35°C  
 (b) Heating mode, external air temperature 2°C b.s./1°C b.u., inlet/outlet water temperature 30°C/35°C  
 (c) Heating mode, external air temperature -7°C b.s./-8°C b.u., inlet/outlet water temperature 30°C/35°C  
 (d) Heating mode, external air temperature -15°C b.s./-16°C b.u., inlet/outlet water temperature 40°C/45°C  
 (e) Heating mode, external air temperature 7°C b.s./6°C b.u., inlet/outlet water temperature 40°C/45°C  
 (f) Heating mode, external air temperature 2°C b.s./1°C b.u., inlet/outlet water temperature 40°C/45°C  
 (g) Heating mode, external air temperature -7°C b.s./-8°C b.u., inlet/outlet water temperature 40°C/45°C  
 (h) Heating mode, external air temperature -15°C b.s./-16°C b.u., inlet/outlet water temperature 40°C/45°C  
 (i) Heating mode, external air temperature -15°C b.s./-16°C b.u., inlet/outlet water temperature 40°C/45°C  
 (l) Cooling mode, external air temperature 35°C, inlet/outlet water temperature 23°C/18°C  
 (m) Cooling mode, external air temperature 35°C, inlet/outlet water temperature 12°C/7°C  
 (n) Sound pressure values measured at a distance of 1 m in a semi-anechoic chamber  
 (o) Sound pressure values measured at a distance of 4 m in free field distance  
 (p) Non-airtightly 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

SINGLE-PHASE R410A TECHNICAL DATA				12			14			16				
ODU Sherpa S2				02005			02006			02007				
IDU Sherpa Aquadue S2				02043			02043			02043				
IDU Sherpa Aquadue Tower S2				02045			02045			02045				
Compressor frequency				Minimum	Nominal	Maximum	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum		
PRECISE PERFORMANCE	Heating output	a7/6 - w30/35	(a)	kW	4.77	12.1	15.79	5.52	14	18.27	6.12	15.5	20.23	
	COP	a7/6 - w30/35	(a)	W/W	-	4.42	-	-	4.13	-	-	4.06	-	
	Heating output	a2/1 - w30/35	(b)	kW	3.63	9.22	11.51	4.34	11.03	13.77	4.6	11.68	14.59	
	COP	a2/1 - w30/35	(b)	W/W	-	3.52	-	-	3.35	-	-	3.28	-	
	Heating output	a-7/-8 - w30/35	(c)	kW	3.83	9.96	10.93	4.22	10.99	12.06	4.59	11.94	13.11	
	COP	a-7/-8 - w30/35	(c)	W/W	-	2.8	-	-	2.7	-	-	2.64	-	
	Heating output	a-15/-16 - w30/35	(d)	kW	2.27	5.9	6.48	2.53	6.58	7.22	2.79	7.26	7.97	
	COP	a-15/-16 - w30/35	(d)	W/W	-	2.06	-	-	1.94	-	-	1.92	-	
	Heating output (fancoils)	a7/6 - w40/45	(f)	kW	4.68	11.85	15.46	5.54	14.05	18.33	6.33	16.05	20.94	
	COP (fancoils)	a7/6 - w40/45	(f)	W/W	-	3.41	-	-	3.19	-	-	3.19	-	
	Heating output (fancoils)	a2/1 - w40/45	(g)	kW	3.65	9.26	11.56	4.55	11.55	14.42	4.64	11.78	14.71	
	COP (fancoils)	a2/1 - w40/45	(g)	W/W	-	2.77	-	-	2.74	-	-	2.73	-	
	Heating output (fancoils)	a-7/-8 - w40/45	(h)	kW	3.65	9.51	10.44	4.37	11.38	12.49	4.39	11.42	12.54	
	COP (fancoils)	a-7/-8 - w40/45	(h)	W/W	-	2.22	-	-	2.18	-	-	2.17	-	
	Heating output (fancoils)	a-15/-16 - w40/45	(i)	kW	1.92	5.01	5.5	2.15	5.59	6.14	2.37	6.17	6.77	
	COP (fancoils)	a-15/-16 - w40/45	(i)	W/W	-	1.66	-	-	1.57	-	-	1.55	-	
	Cooling power	a35 - w23/18	(l)	kW	5.51	11.8	14.05	6.07	13	15.48	6.54	14	16.67	
	EER	a35 - w23/18	(l)	W/W	-	4.45	-	-	4.02	-	-	3.87	-	
	Cooling output (fancoils)	a35 - w12/7	(m)	kW	5.15	11.02	13.13	5.83	12.49	14.88	6	12.85	15.3	
	EER (fancoils)	a35 - w12/7	(m)	W/W	-	2.64	-	-	2.46	-	-	2.38	-	
EFFICIENCIES	Energy efficiency class in water heating 35°C	Warmer Climate			A+++			A+++			A+++			
	SCOP	Warmer Climate			6.16			5.31			5.28			
	s (Seasonal efficiency for space heating)	Warmer Climate	ηs %		245.0			211.0			210.0			
	Energy efficiency class in water heating 35°C	Average Climate			A+++			A++			A++			
	SCOP	Average Climate			4.41			4.23			3.96			
	s (Seasonal efficiency for space heating)	Average Climate	ηs %		175.0			168.0			157.0			
	Energy efficiency class in water heating 35°C	Cold Climate			A+			A+			A+			
	SCOP	Cold Climate			3.58			3.33			3.41			
	s (Seasonal efficiency for space heating)	Cold Climate	ηs %		142.0			132.0			135.0			
	Energy efficiency class in water heating 55°C	Warmer Climate			A+++			A+++			A+++			
	SCOP	Warmer Climate			4.33			4.18			4.51			
	s (Seasonal efficiency for space heating)	Warmer Climate	ηs %		172.0			166.0			179.0			
	Energy efficiency class in water heating 55°C	Average Climate			A++			A++			A++			
	SCOP	Average Climate			3.21			3.23			3.21			
	s (Seasonal efficiency for space heating)	Average Climate	ηs %		127.0			128.0			127.0			
	Energy efficiency class in water heating 55°C	Cold Climate			A+			A+			A+			
	SCOP	Cold Climate			2.81			2.81			2.81			
	s (Seasonal efficiency for space heating)	Cold Climate	ηs %		111.0			111.0			111.0			
	NOISE LEVEL	Indoor unit sound power			dB(A)	46			46			46		
		Indoor unit sound pressure	(n)		dB(A)	40			40			40		
Outdoor unit sound power (nominal)				dB(A)	69			71			72			
Outdoor unit sound pressure (nominal)		(o)		dB(A)	46			48			49			
System circulator absorption				W	8 - 140			8 - 140			8 - 140			
Supply voltage indoor unit				V/ph/Hz	220-240/1/50			220-240/1/50			220-240/1/50			
Maximum current absorbed indoor unit with additional active heating elements				A	31.00			31.00			31.00			
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			
Supply voltage outdoor unit				V/ph/Hz	220-240/1/50			220-240/1/50			220-240/1/50			
ELECTRICAL DATA	Outdoor unit maximum absorbed current			A	27			27			27			
	Outdoor unit maximum absorbed power			kW	6			6			6			
	Compressor type				Twin Rotary DC Inverter 6 poles			Twin Rotary DC Inverter 6 poles			Twin Rotary DC Inverter 6 poles			
	Refrigerant inlet connection diameter			"	3/8"-5/8"			3/8"-5/8"			3/8"-5/8"			
	Coolant gas		(p)		R410A			R410A			R410A			
	Global warming potential			GWP	2088			2088			2088			
	Refrigerant gas charge			kg	3.9			3.9			3.9			
	Refrigerant piping length limit			min - max	2 - 50			2 - 50			2 - 50			
	Refrigerant piping length limit without minimum surface check according to IEC 60335-2-40:2018		(q)		-			-			-			
	Drinking water - DHW hydraulic connections			"	1"			1"			1"			
HYDRAULIC DATA	System expansion valve capacity			l	8			8			8			
	Load profile according to EN16147				L			L			L			
	DHW production energy efficiency class				A			A			A			
	ηHW (seasonal production efficiency DHW)			%	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			
INTEGRATED DHW BOILER	DHW hydraulic connections			"	3/4"			3/4"			3/4"			
	DHW circuit heating capacity		(r)	kW	2.15			2.15			2.15			
	COP DHW circuit		(r)	W/W	3.12			3.12			3.12			
	DHW circuit heating capacity		(s)	kW	1.6			1.6			1.6			
	COP DHW circuit		(s)	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		(t)		R134a			R134a			R134a			
	DHW circuit global warming potential			GWP	1430			1430			1430			
	DHW circuit coolant gas load			kg	0.35			0.35			0.35			
SECONDARY DHW COOLING CIRCUIT	Heating mode, external air temperature 7°C b.s./6°C b.u., inlet/outlet water temperature 30°C/35°C				4.77			5.52			6.12			
	Heating mode, external air temperature 2°C b.s./1°C b.u., inlet/outlet water temperature 30°C/35°C				4.42			4.13			4.06			
	Heating mode, external air temperature -7°C b.s./-8°C b.u., inlet/outlet water temperature 30°C/35°C				3.63			4.34			4.6			
	Heating mode, external air temperature -15°C b.s./-16°C b.u., inlet/outlet water temperature 30°C/35°C				2.8			2.7			2.64			
	Heating mode, external air temperature 7°C b.s./6°C b.u., inlet/outlet water temperature 40°C/45°C				3.83			4.22			4.59			
	Heating mode, external air temperature 2°C b.s./1°C b.u., inlet/outlet water temperature 40°C/45°C				2.27			2.53			2.79			
	Heating mode, external air temperature -7°C b.s./-8°C b.u., inlet/outlet water temperature 40°C/45°C				1.92			2.15			2.37			
	Heating mode, external air temperature -15°C b.s./-16°C b.u., inlet/outlet water temperature 40°C/45°C				1.66			1.57			1.55			
	Cooling mode, external air temperature 35°C, inlet/outlet water temperature 23°C/18°C				5.51			6.07			6.54			
	Cooling mode, external air temperature 35°C, inlet/outlet water temperature 12°C/7°C				4.45			4.02			3.87			

(a) Heating mode, external air temperature 7°C b.s./6°C b.u., inlet/outlet water temperature 30°C/35°C  
 (b) Heating mode, external air temperature 2°C b.s./1°C b.u., inlet/outlet water temperature 30°C/35°C  
 (c) Heating mode, external air temperature -7°C b.s./-8°C b.u., inlet/outlet water temperature 30°C/35°C  
 (d) Heating mode, external air temperature -15°C b.s./-16°C b.u., inlet/outlet water temperature 30°C/35°C  
 (e) Heating mode, external air temperature 7°C b.s./6°C b.u., inlet/outlet water temperature 40°C/45°C  
 (f) Heating mode, external air temperature 2°C b.s./1°C b.u., inlet/outlet water temperature 40°C/45°C  
 (g) Heating mode, external air temperature -7°C b.s./-8°C b.u., inlet/outlet water temperature 40°C/45°C  
 (h) Heating mode, external air temperature -15°C b.s./-16°C b.u., inlet/outlet water temperature 40°C/45°C  
 (i) Heating mode, external air temperature -7°C b.s./-8°C b.u., inlet/outlet water temperature 40°C/45°C  
 (j) Heating mode, external air temperature -15°C b.s./-16°C b.u., inlet/outlet water temperature 40°C/45°C  
 (k) Cooling mode, external air temperature 35°C, inlet/outlet water temperature 23°C/18°C

(m) Cooling mode, external air temperature 35°C, inlet/outlet water temperature 12°C/7°C  
 (n) Sound pressure values measured at a distance of 1 m in a semi-anechoic chamber  
 (o) Sound pressure values measured at a distance of 4 m in free field distance  
 (p) Non-airtightly 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

ONLY FOR SHERPA-AQUADUE TOWER S2

BMS  
HEAT PUMPS  
FAN COIL UNITS  
CWU  
UNICO  
FIXED AIR CONDITIONERS  
PORTABLES

**THREE-PHASE R410A TECHNICAL DATA**

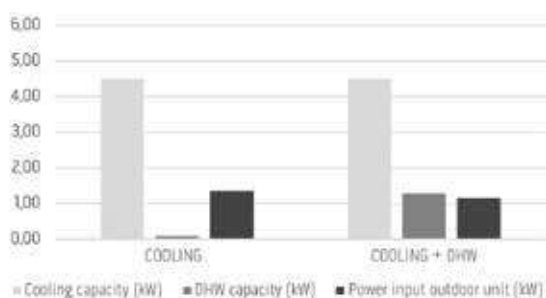
				12T			14T			16T				
ODU Sherpa S2				02008			02009			02010				
IDU Sherpa Aquadue S2				02043			02043			02043				
IDU Sherpa Aquadue Tower S2				02045			02045			02045				
Compressor frequency				Minimum	Nominal	Maximum	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum		
PRECISE PERFORMANCE	Heating output	a7/6 - w30/35	(a)	kW	4.77	12.1	15.79	5.52	14	18.27	6.12	15.5	20.23	
	COP	a7/6 - w30/35	(a)	W/W	-	4.53	-	-	4.31	-	-	4.19	-	
	Heating output	a2/1 - w30/35	(b)	kW	3.6	9.14	11.41	4.29	10.91	13.62	4.31	10.95	13.67	
	COP	a2/1 - w30/35	(b)	W/W	-	3.6	-	-	3.42	-	-	3.39	-	
	Heating output	a7/8 - w30/35	(c)	kW	3.72	9.69	10.64	4.31	11.21	12.31	4.32	11.25	12.35	
	COP	a7/8 - w30/35	(c)	W/W	-	2.75	-	-	2.66	-	-	2.64	-	
	Heating output	a-15/-16 - w30/35	(d)	kW	2.38	6.19	6.79	2.74	7.13	7.83	2.93	7.62	8.36	
	COP	a-15/-16 - w30/35	(d)	W/W	-	2.17	-	-	2.09	-	-	2.05	-	
	Heating output (fancoils)	a7/6 - w40/45	(f)	kW	4.7	11.91	15.54	5.48	13.9	18.14	6.13	15.53	20.26	
	COP (fancoils)	a7/6 - w40/45	(f)	W/W	-	3.44	-	-	3.3	-	-	3.18	-	
	Heating output (fancoils)	a2/1 - w40/45	(g)	kW	3.65	9.26	11.56	4.51	11.46	14.31	4.97	12.62	15.76	
	COP (fancoils)	a2/1 - w40/45	(g)	W/W	-	2.8	-	-	2.7	-	-	2.68	-	
	Heating output (fancoils)	a-7/-8 - w40/45	(h)	kW	3.73	9.7	10.65	4.38	11.4	12.51	4.39	11.44	12.56	
	COP (fancoils)	a-7/-8 - w40/45	(h)	W/W	-	2.26	-	-	2.17	-	-	2.15	-	
	Heating output (fancoils)	a-15/-16 - w40/45	(i)	kW	2.02	5.27	5.78	2.33	6.06	6.65	2.49	6.48	7.11	
	COP (fancoils)	a-15/-16 - w40/45	(i)	W/W	-	1.74	-	-	1.67	-	-	1.64	-	
	Cooling power	a35 - w23/18	(l)	kW	5.51	11.8	14.05	6.45	13.8	16.44	6.87	14.7	17.51	
	EER	a35 - w23/18	(l)	W/W	-	4.59	-	-	4.21	-	-	3.9	-	
	Cooling output (fancoils)	a35 - w12/7	(m)	kW	5.72	12.25	14.59	5.83	13.24	14.88	6.27	13.43	16	
	EER (fancoils)	a35 - w12/7	(m)	W/W	-	2.69	-	-	2.51	-	-	2.41	-	
	EFFICIENCIES	Energy efficiency class in water heating 35°C	Warmer Climate			A+++			A+++			A+++		
		SCOP	Warmer Climate			6.41			6.53			6.13		
		s (Seasonal efficiency for space heating)	Warmer Climate	ηs %		255.0			260.0			244.0		
		Energy efficiency class in water heating 35°C	Average Climate			A+++			A+++			A++		
		SCOP	Average Climate			4.63			4.51			4.33		
		s (Seasonal efficiency for space heating)	Average Climate	ηs %		184.0			179.0			172.0		
		Energy efficiency class in water heating 35°C	Cold Climate			A++			A++			A+		
		SCOP	Cold Climate			3.96			3.78			3.61		
s (Seasonal efficiency for space heating)		Cold Climate	ηs %		157.0			150.0			143.0			
Energy efficiency class in water heating 55°C		Warmer Climate			A+++			A+++			A+++			
SCOP		Warmer Climate			4.13			4.21			4.21			
s (Seasonal efficiency for space heating)		Warmer Climate	ηs %		164.0			167.0			167.0			
Energy efficiency class in water heating 55°C		Average Climate			A++			A++			A++			
SCOP		Average Climate			3.23			3.28			3.28			
s (Seasonal efficiency for space heating)		Average Climate	ηs %		128.0			130.0			130.0			
Energy efficiency class in water heating 55°C		Cold Climate			A+			A+			A+			
SCOP		Cold Climate			2.78			2.73			2.76			
s (Seasonal efficiency for space heating)		Cold Climate	ηs %		110.0			108.0			109.0			
NOISE LEVEL		Indoor unit sound power			dB(A)	46			46			46		
		Indoor unit sound pressure	(n)		dB(A)	40			40			40		
		Outdoor unit sound power (nominal)			dB(A)	70			72			72		
		Outdoor unit sound pressure (nominal)	(o)		dB(A)	47			49			49		
ELECTRICAL DATA		System circulator absorption			W	8 - 140			8 - 140			8 - 140		
		Supply voltage indoor unit			V/ph/Hz	220-240/1/50			220-240/1/50			220-240/1/50		
		Maximum current absorbed indoor unit with additional active heating elements			A	31.00			31.00			31.00		
		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		
		Supply voltage outdoor unit			V/ph/Hz	380-415/3/50			380-415/3/50			380-415/3/50		
	Outdoor unit maximum absorbed current			A	9			9			9			
	Outdoor unit maximum absorbed power			kW	6			6			6			
	Compressor type				Twin Rotary DC Inverter 6 poles			Twin Rotary DC Inverter 6 poles			Twin Rotary DC Inverter 6 poles			
	Refrigerant inlet connection diameter			"	3/8"-5/8"			3/8"-5/8"			3/8"-5/8"			
HYDRAULIC DATA	Coolant gas	(p)			R410A			R410A			R410A			
	Global warming potential			GWP	2088			2088			2088			
	Refrigerant gas charge			kg	4.2			4.2			4.2			
	Refrigerant piping length limit			min - max	2 - 50			2 - 50			2 - 50			
	Refrigerant piping length limit without minimum surface check according to IEC 60335-2-40:2018			max (q)	-			-			-			
	Drinking water - DHW hydraulic connections			"	1"			1"			1"			
	System expansion valve capacity			l	8			8			8			
	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			
INTEGRATED DHW BOILER	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			m <sup>2</sup>	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"			
	DHW circuit heating capacity	w35 - w55	(r)		kW	2.15			2.15			2.15		
	COP DHW circuit	w35 - w55	(r)		W/W	3.12			3.12			3.12		
	DHW circuit heating capacity	w12 - w55	(s)		kW	1.6			1.6			1.6		
SECONDARY DHW COOLING CIRCUIT	COP DHW circuit	w12 - w55	(s)	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			(t)	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) Heating mode, external air temperature 7°C b.s./6°C b.u., inlet/outlet water temperature 30°C/35°C
- (b) Heating mode, external air temperature 2°C b.s./1°C b.u., inlet/outlet water temperature 30°C/35°C
- (c) Heating mode, external air temperature -7°C b.s./-8°C b.u., inlet/outlet water temperature 30°C/35°C
- (d) Heating mode, external air temperature -15°C b.s./-16°C b.u., inlet/outlet water temperature 30°C/35°C
- (e) Heating mode, external air temperature 7°C b.s./6°C b.u., inlet/outlet water temperature 40°C/45°C
- (f) Heating mode, external air temperature 2°C b.s./1°C b.u., inlet/outlet water temperature 40°C/45°C
- (g) Heating mode, external air temperature -7°C b.s./-8°C b.u., inlet/outlet water temperature 40°C/45°C
- (h) Heating mode, external air temperature -15°C b.s./-16°C b.u., inlet/outlet water temperature 40°C/45°C
- (i) Heating mode, external air temperature -15°C b.s./-16°C b.u., inlet/outlet water temperature 40°C/45°C
- (l) Cooling mode, external air temperature 35°C, inlet/outlet water temperature 23°C/18°C

- (m) Cooling mode, external air temperature 35°C, inlet/outlet water temperature 12°C/7°C
- (n) Sound pressure values measured at a distance of 1 m in a semi-anechoic chamber
- (o) Sound pressure values measured at a distance of 4 m in free field distance
- (p) Non-airtightly 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

		4			6			8			10			
		Cooling w7 - a35	DHW w65 - w12	Cooling w7 - A35 DHW w65 - w12	Cooling w7 - a35	DHW w65 - w12	Cooling w7 - A35 DHW w65 - w12	Cooling w7 - a35	DHW w65 - w12	Cooling w7 - A35 DHW w65 - w12	Cooling w7 - a35	DHW w65 - w12	Cooling w7 - A35 DHW w65 - w12	
First circuit + second circuit data	Cooling capacity	kw	4.50	0.64	4.50	6.50	0.64	6.50	7.38	0.64	7.38	8.15	0.64	8.15
	DHW yield	kw	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	kw	1.36	0.56	1.16	2.20	0.56	1.89	2.44	0.56	2.09	2.76	0.56	2.37
	COP EER		3.32	2.30	3.88	2.95	2.30	3.44	3.02	2.30	3.53	2.95	2.30	3.44

		12			14			16			12T			14T			16T			
		Cooling w7 - a35	DHW w65 - w12	Cooling w7 - A35 DHW w65 - w12	Cooling w7 - a35	DHW w65 - w12	Cooling w7 - A35 DHW w65 - w12	Cooling w7 - a35	DHW w65 - w12	Cooling w7 - A35 DHW w65 - w12	Cooling w7 - a35	DHW w65 - w12	Cooling w7 - A35 DHW w65 - w12	Cooling w7 - a35	DHW w65 - w12	Cooling w7 - A35 DHW w65 - w12	Cooling w7 - a35	DHW w65 - w12	Cooling w7 - A35 DHW w65 - w12	
First circuit + second circuit data	Cooling capacity	kw	11.02	0.64	11.02	12.49	0.64	12.49	12.85	0.64	12.85	12.25	0.64	12.25	13.24	0.64	13.24	13.43	0.64	13.43
	DHW yield	kw	0.00	1.28	1.28	0.00	1.28	1.28	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	kw	4.17	0.56	3.57	5.08	0.56	4.35	5.40	0.56	4.62	4.55	0.56	3.90	5.27	0.56	4.52	5.57	0.56	4.77
	COP EER		2.64	2.30	3.08	2.46	2.30	2.87	2.38	2.30	2.78	2.69	2.30	3.14	2.51	2.30	2.93	2.41	2.30	2.81

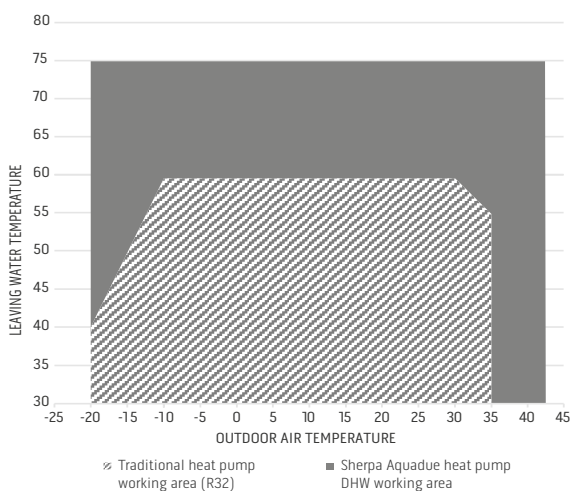


## COOLING + DHW WITH ENERGY RECOVERY

During summer operation in cooling mode, the cycle dedicated to DHW production extracts heat from return water from the system circuit.

The cooling requirements of the building is partially satisfied by the DHW cycle and the comfort refrigerating cycle must deliver less power by reducing the speed of the inverter compressor.

The heat taken from the system is recovered in hot water for domestic use. The efficiency of the integrated system increases (ratio between the energy produced and the energy absorbed from the mains).



## PERFORMANCE AND ENERGY ADVANTAGES

In adverse weather conditions traditional heat pumps decrease thermal output producing water at a lower temperature. Sherpa AQUADUE® as well as extending the area of operation ensures a constant heat output, in the production of Domestic Hot Water. The double refrigerator circuit allows higher DHW production temperatures thanks to the water-water circuit which are independent of outside air temperature. In summer cooling operation the refrigeration cycle dedicated to DHW production removes heat from the comfort circuit increasing the overall efficiency of the system.

## ACCESSORIES

			suspended	tower
COMMANDS	B0916	Kit 3-way valve for DHW	●	●
	B0623	Outdoor air temperature probe kit	●	●
	B0624	Kit DHW storage tank sensor	●	●
	B0931	Remote control display kit 10 m	○	○
OTHER	B0918	Kit Sherpa Flex Box AS	NEW ○	○
	B0961	Kit Sherpa Flex Box AS RAL 9016	NEW ○	○
STORAGE TANKS / PUFFER	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	○	○

○ Optional accessory | ● Standard accessory | — Accessory not compatible

Accessory description on page 50

Please note that optional accessories are available for purchase with all models of the heat pump. When compatibility is only possible with certain sizes, the information is shown in the table. Standard accessories are already included in the heat pump code.