

**Air/Water chillers
and heat pumps
with axial fans
and screw compressor**

344 ÷ 1541 kW



KAPPA V ENERGY

Water chiller

Frame

Modular self-supporting frame, in galvanised sheet steel with baked-on epoxy polyester powder coating (colour RAL 5014) and threaded fasteners in stainless steel. The condensing coils are equipped with impact protection in the form of painted steel grilles.

Compressors

From size 35.2 to size 67.2 semi-hermetic single screw with continuous capacity control from 30% to 100% of the load.

From size 80.2 to size 160.4 semi-hermetic double screw with continuous capacity control from 25% to 100% of the load.

Each compressor is equipped with a crankcase heater and built-in electronic protection with temperature sensors located directly in the windings and on the discharge pipeline. "Star-delta" motor starting".

Refrigerant circuit

Independent circuits with compressor discharge shut-off valve, liquid line shut-off valves, charge connections, liquid line sight glass, filter-dryer with interchangeable solid cartridge, electronic expansion valve, high and low pressure transducers, high pressure switches and relief valve. Sizes from 80.2 to 160.4, with double screw compressor, are equipped with economizer (brazed plate exchanger) with relative thermostatic valve and by-pass line solenoid valve.

Evaporator

Dry expansion shell and tube type evaporator, equipped with an anti-freeze protection temperature sensor for each standard exchanger and flow switch.

Condenser

Composed of high efficiency finned coil in reverse "M" execution and protected by a hail-resistant metal mesh.

Fans

Axial fans, with bell mouth and safety grille, directly coupled to 6-pole three-phase motors with thermal protection.

Electrical Panel

With main power switch, power and control circuits protection, compressor contactors

and fan contactors. Microprocessor control with functions read-out on display.

400V/3~/50Hz power supply.

Testing

The units are factory tested and supplied complete with oil and refrigerant.

KAPPA V ENERGY /HP

Reversible heat pump

In addition to the components featured on KAPPA V ECHOS, this version includes: 4-way reversing valve, suction line separator, liquid receiver, and second electronic expansion valve. Independent activation of defrost cycles on both circuits and management in accordance with patented Blue Box logic.

HYDRAULIC MODULE OPTIONS

KAPPA V ENERGY /ST2PS

This layout includes insulated storage tank, run and standby circulator pumps with automatic changeover, expansion tank, check valves and gate valves.

KAPPA V ENERGY /ST1PS

With respect to the ST2PS layout this version is not equipped with check valves and has a single pump.

KAPPA V ENERGY /ST2P

With respect to the ST2PS layout this version is not equipped with a storage tank and has a single gate valve.

KAPPA V ENERGY /ST1P

With respect to the ST2PS layout this version is not equipped with a storage tank or check valves, and has a single gate valve.

ACCESSORY VERSIONS

KAPPA V ENERGY /DC

Unit with heat recovery condenser for 100% recovery of rejection heat for the production of hot water, liquid receiver and automatic microprocessor control of water temperature. This accessory is not available in the HP version.

KAPPA V ENERGY /DS

Unit with desuperheater for recovery of 20% of rejection heat, installed in series with the

condensing coil. This version is available also in the HP layout.

KAPPA V ENERGY /LN

In addition to the components of the basic version this low noise unit features a fully acoustically insulated compressor compartment with sound absorbing matting and an interposed layer of sound-deadening material, and fan speed regulator.

KAPPA V ENERGY /SLN

The unit uses the semi-hermetic single screw compressors for all sizes, taking advantage of their extremely quiet operation and reducing the number of noise sources.

In addition to the components of the KAPPA V ENERGY /LN version, this unit features increased surface area coils and reduced speed fans driven by 8-pole motors.

KAPPA V ENERGY /HT

In addition to the components of the basic version, this high ambient air temperature unit features increased surface area coils, fans designed to run at high ambient air temperatures, forced ventilation of the electrical cabinet interior, electrical cabinet components sized to withstand high temperatures, and electrical cabinet canopy roof for sun protection.

KAPPA V ENERGY /HE

In addition to the components of the basic version this high efficiency unit features increased surface area coils and fan speed regulator.

MAIN ACCESSORY

- See price list
- Condensing pressure control by means of fan speed regulator
- Dual set point (high/low temperature) with single electronic thermostatic valve
- Low water temperatures kit
- RS485 serial interface supporting Carel, Modbus, Echelon and Bacnet protocols; combinable also with Johnson and Trend supervision
- Power factor correction $\cos \phi \geq 0,9$
- Remote user terminal (in addition to the standard terminal).

KAPPA V ENERGY - TECHNICAL DATA R134A

Unit size		35.2	43.2	51.2	52.2
Nominal cooling capacity (*)	kW	344,1	442,2	515,7	527,1
Nominal heating capacity (**)	kW	348,0	458,5	530,5	548,7
Compressori					
Quantity/Refrigerant circuits	n	2/2	2/2	2/2	2/2
Cooling power input (*)	kW	115,8	132,6	155,9	165,5
Heating power input (**)	kW	108,6	126,5	143,6	154,8
Capacity steps	%	Continuos	Continuos	Continuos	Continuos
Fans					
Air flow	m ³ /s	35,0	47,0	46,2	46,2
No. x installed power	n° x kW	6 x 2,00	8 x 2,00	8 x 2,00	8 x 2,00
Evaporator characteristics					
Pressure drop	kPa	23,1	24,3	38,9	41,3
Hydraulic module characteristics					
Water flow rate	l/s	16,384	21,077	24,594	25,138
Available pump pressure	kPa	-	219	173	-
Storage tank capacity	l	-	740	740	-
Expansion vessel	l	-	25	25	-
Noise level (***)					
Basic unit	dB(A)	76	76	78	78
LN version	dB(A)	71	71	72	72
Power supply	V/ph/Hz	400/3~/50	400/3~/50	400/3~/50	400/3~/50
Dimensions and weight					
Width	mm	4251	5751	5751	5751
Depth	mm	2276	2276	2276	2276
Height	mm	2368	2368	2368	2368
Operating weight	kg	3708	4594	4702	4870

Unit size		54.2	61.2	67.2	80.2
Nominal cooling capacity (*)	kW	538,6	604,7	668,0	784,8
Nominal heating capacity (**)	kW	566,7	-	-	-
Compressori					
Quantity/Refrigerant circuits	n	2/2	2/2	2/2	2/2
Cooling power input (*)	kW	175,0	195,8	217,5	235,5
Heating power input (**)	kW	166,2	-	-	-
Capacity steps	%	Continuos	Continuos	Continuos	Continuos
Fans					
Air flow	m ³ /s	46,2	58,3	70,0	68,3
No. x installed power	n° x kW	8 x 2,00	10 x 2,00	12 x 2,00	12 x 2,00
Evaporator characteristics					
Pressure drop	kPa	43,7	24,8	29,8	40,0
Hydraulic module characteristics					
Water flow rate	l/s	25,793	28,839	31,843	37,414
Available pump pressure	kPa	-	180	165	198
Storage tank capacity	l	-	740	740	900
Expansion vessel	l	-	25	25	25
Noise level (***)					
Basic unit	dB(A)	78	78	78	85
LN version	dB(A)	72	72	74	79
Power supply	V/ph/Hz	400/3~/50	400/3~/50	400/3~/50	400/3~/50
Dimensions and weight					
Width	mm	5751	7112	8112	8108
Depth	mm	2276	2284	2284	2284
Height	mm	2368	2368	2368	2368
Operating weight	kg	5022	6666	6302	7882

(*) Ambient air temperature 35°C; evaporator inlet/outlet water temperature 12-7°C.

(**) Ambient air temperature 8°C DB, 50% R.H.; condenser inlet/outlet water temperature 40-45°C.

(***) Sound pressure levels measured in free field conditions at distance of 1 m from the unit.

This datasheet gives the characteristic data of the basic and standard versions of the series; for details refer to the specific documentation

KAPPA V ENERGY - TECHNICAL DATA R134A

Unit size		85.2	90.2	95.2	100.2
Nominal cooling capacity (*)	kW	841,6	898,4	955,9	1013,3
Nominal heating capacity (**)	kW	-	-	-	-
Compressori					
Quantity/Refrigerant circuits	n	2/2	2/2	2/2	2/2
Cooling power input (*)	kW	252,0	268,7	284,1	299,5
Heating power input (**)	kW	-	-	-	-
Capacity steps	%	Continuos	Continuos	Continuos	Continuos
Fans					
Air flow	m ³ /s	81,9	95,6	94,0	92,4
No. x installed power	n° x kW	14 x 2,00	16 x 2,00	16 x 2,00	16 x 2,00
Evaporator characteristics					
Pressure drop	kPa	41,2	46,6	61,1	67,5
Hydraulic module characteristics					
Water flow rate	l/s	40,129	42,824	45,57	48,308
Available pump pressure	kPa	178	174	191	178
Storage tank capacity	l	900	900	900	900
Expansion vessel	l	25	25	25	25
Noise level (***)					
Basic unit	dB(A)	85	85	85	85
LN version	dB(A)	79	79	79	79
Power supply	V/ph/Hz	400/3~/50	400/3~/50	400/3~/50	400/3~/50
Dimensions and weight					
Width	mm	9611,5	11080	11080	11080
Depth	mm	2284	2284	2284	2284
Height	mm	2368	2368	2368	2368
Operating weight	kg	8409	8940	9478	9750
Unit size		110.2	120.3	140.4	160.4
Nominal cooling capacity (*)	kW	1120,1	1196,4	1315,6	1541,4
Nominal heating capacity (**)	kW	-	-	-	-
Compressori					
Quantity/Refrigerant circuits	n	2/2	3/3	4/4	4/4
Cooling power input (*)	kW	330,2	380,9	400,2	504,3
Heating power input (**)	kW	-	-	-	-
Capacity steps	%	Continuos	Continuos	Continuos	Continuos
Fans					
Air flow	m ³ /s	92,4	85,6	91,1	104,4
No. x installed power	n° x kW	16 x 2,00	16 x 2,00	16 x 2,00	20 x 2,00
Evaporator characteristics					
Pressure drop	kPa	40,0	37,1	59,1	61,8
Hydraulic module characteristics					
Water flow rate	l/s	53,295	57,160	62,741	73,512
Available pump pressure	kPa	163	-	-	-
Storage tank capacity	l	900	-	-	-
Expansion vessel	l	25	-	-	-
Noise level (***)					
Basic unit	dB(A)	85	86	86	86
LN version	dB(A)	79	80	80	80
Power supply	V/ph/Hz	400/3~/50	400/3~/50	400/3~/50	400/3~/50
Dimensions and weight					
Width	mm	11080	11483	11483	11483
Depth	mm	2284	2284	2284	2284
Height	mm	2368	2368	2368	2368
Operating weight	kg	9860	11796	11616	12508

(*) Ambient air temperature 35°C; evaporator inlet/outlet water temperature 12-7°C.

(**) Ambient air temperature 8°C DB, 50% R.H.; condenser inlet/outlet water temperature 40-45°C.

(***) Sound pressure levels measured in free field conditions at distance of 1 m from the unit.

This datasheet gives the characteristic data of the basic and standard versions of the series; for details refer to the specific documentation

KAPPA V ENERGY SLN - TECHNICAL DATA R134A

Unit size		35.2	43.2	51.2	52.2	54.2	61.2	67.2
Nominal cooling capacity (*)	kW	336,9	427,9	501,8	510,7	520,3	590,8	660,2
Nominal heating capacity (**)	kW	365,5	459,0	540,9	559,9	578,4	-	-
Compressori								
Quantity/Refrigerant circuits	n	2/2	2/2	2/2	2/2	2/2	2/2	2/2
Cooling power input (*)	kW	117,7	137,1	160,9	171,0	181,0	200,3	220,2
Heating power input (**)	kW	110,1	126,5	144,5	155,5	166,6	-	-
Capacity steps	%	Continuos	Continuos	Continuos	Continuos	Continuos	Continuos	Continuos
Fans								
Air flow	m3/s	26,333	35,667	34,667	34,667	34,667	43,667	52,667
No. x installed power	n x kW	6 x 1,25	8 x 1,25	8 x 1,25	8 x 1,25	8 x 1,25	10 x 1,25	12 x 1,25
Evaporator characteristics								
Pressure drop	kPa	34,0	47,9	71,7	74,0	76,2	77,5	94,6
Hydraulic module characteristics								
Water flow rate	l/s	16,043	20,438	23,932	24,355	24,814	28,234	31,477
Available pump pressure	kPa	-	-	-	-	-	133	103
Storage tank capacity	l	-	-	-	-	-	740	740
Expansion vessel	l	-	-	-	-	-	25	25
Noise level (***)								
LN version	dB(A)	69	69	70	70	70	70	72
Power supply	V/ph/Hz	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50
Dimensions and weight								
Width	mm	4251	5751	5751	5751	5751	7112	8112
Depth	mm	2276	2276	2276	2276	2276	2284	2284
Height	mm	2368	2368	2368	2368	2368	2368	2368
Operating weight	kg	4410	4992	5188	5386	5570	7364	6916

Unit size		78.3	83.3	88.3	94.3	100.4	110.4
Nominal cooling capacity (*)	kW	747,8	771,7	841,6	907,0	972,4	1002,3
Nominal heating capacity (**)	kW	-	-	-	-	-	-
Compressori							
Quantity/Refrigerant circuits	n	3/3	3/3	3/3	3/3	4/4	4/4
Cooling power input (*)	kW	243,3	270,7	289,6	307,5	320,6	358,2
Heating power input (**)	kW	-	-	-	-	-	-
Capacity steps	%	Continuos	Continuos	Continuos	Continuos	Continuos	Continuos
Fans							
Air flow	m3/s	52,000	52,000	61,000	71,000	69,333	69,333
No. x installed power	n x kW	12 x 1,25	12 x 1,25	14 x 1,25	16 x 1,25	16 x 1,25	16 x 1,25
Evaporator characteristics							
Pressure drop	kPa	61,0	76,0	96,4	111,8	127,8	135,3
Hydraulic module characteristics							
Water flow rate	l/s	35,679	36,801	40,133	43,341	46,418	47,815
Available pump pressure	kPa	-	-	-	-	-	-
Storage tank capacity	l	-	-	-	-	-	-
Expansion vessel	l	-	-	-	-	-	-
Noise level (***)							
LN version	dB(A)	72	72	72	72	72	72
Power supply	V/ph/Hz	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50
Dimensions and weight							
Width	mm	9008	9008	10008	11080	11080	11080
Depth	mm	2284	2284	2284	2284	2284	2284
Height	mm	2368	2368	2368	2368	2368	2368
Operating weight	kg	7969	8791	9180	10028	10352	11080