

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

351 ÷ 1551 kW



### KAPPA V EVO

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.

#### Compressors

From size 35.2 to size 54.2 semi-hermetic single screw with continuous capacity control from 30% to 100% of the load.

From size 61.2 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 61.2 to 160.4, with double screw compressor, are equipped with economizer (braze 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.

#### 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.

#### Testing

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

#### KAPPA V EVO /HP

Reversible heat pump

In addition to the components featured on KAPPA V EVO, 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 EVO /ST2PS

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

##### KAPPA V EVO /ST1PS

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

##### KAPPA V EVO /ST2P

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

##### KAPPA V EVO /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 EVO /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 EVO /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 EVO /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 EVO /SLN

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

#### KAPPA V EVO /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 EVO /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

- 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).
- Set-point modification with remote signal (0- 1V, 0-10V, 0-20mA, 4-20mA);
- Current input limitation.

**KAPPA V EVO - TECHNICAL DATA R134A**

Unit size	Note		35.2	43.2	51.2	54.2
<b>KAPPA V EVO - Cooling</b>						
Nominal capacity	(1)	kW	351,4	438,0	493,7	529,5
Total power input	(1),(2)	kW	126,1	150,7	175,5	190,7
EER	(1)		2,79	2,91	2,81	2,78
<b>KAPPA V EVO /HP - Cooling</b>						
Nominal capacity	(1)	kW	351,4	438,0	493,7	529,5
Total power input	(1),(2)	kW	126,1	150,7	175,5	190,7
EER	(1)		2,79	2,91	2,81	2,78
<b>KAPPA V EVO /HP - Heating</b>						
Nominal capacity	(3)	kW	351,1	442,0	494,5	546,7
Total power input	(2),(3)	kW	126,1	150,7	175,5	190,7
COP	(3)		107,72	141,03	145,01	171,38
<b>Compressors</b>						
Quantity / Circuits		n°/n°	2 / 2	2 / 2	2 / 2	2 / 2
<b>Fans</b>						
Quantity		n°	6	8	8	8
Air flow		m <sup>3</sup> /h	140.078	182.000	182.000	174.800
<b>Evaporator</b>						
Pressure drop	(5)	kPa	54,5	55,0	55,1	51,5
<b>Hydraulic module</b>						
External available pressure	(6)	kPa	190,4	222,5	174,1	186,4
Tank capacity	(6)	l	-	740	740	-
Expansione vassel		l	-	25	25	-
<b>Sound level</b>						
Sound pressure value	(4)	dB(A)	76	76	78	78
Sound power value		dB(A)	96	97	99	99
Sound pressure value LN version	(4)	dB(A)	70	70	72	72
Sound power value LN version		dB(A)	90	91	93	93
<b>Basic unit size and weights</b>						
Length		mm	4.251	4.763	4.763	4.763
Width		mm	2.284	2.284	2.284	2.284
Height		mm	2.368	2.368	2.368	2.368
Operating weigh		kg	3.164	3.566	3.590	4.088

Unit size	Note		61.2	67.2	73.2
<b>KAPPA V EVO - Cooling</b>					
Nominal capacity	(1)	kW	637,2	667,2	729,5
Total power input	(1),(2)	kW	204,2	214,9	247,1
EER	(1)		3,12	3,11	2,95
Quantity / Circuits		n°/n°	2 / 2	2 / 2	2 / 2
<b>Fans</b>					
Quantity		n°	10	10	10
Air flow		m <sup>3</sup> /h	218.000	218.000	212.000
<b>Evaporator</b>					
Pressure drop	(5)	kPa	58,5	58,5	
<b>Hydraulic module</b>					
External available pressure	(6)	kPa	178,2	163,1	142,0
Tank capacity	(6)	l	740	740	740
Expansione vassel		l	25	25	25
<b>Sound level</b>					
Sound pressure value	(4)	dB(A)	81	81	81
Sound power value		dB(A)	102	102	102
Sound pressure value LN version	(4)	dB(A)	75	75	75
Sound power value LN version		dB(A)	96	96	96
<b>Basic unit size and weights</b>					
Length		mm	5.762	5.762	5.762
Width		mm	2.284	2.284	2.284
Height		mm	2.368	2.368	2.368
Operating weigh		kg	4.990	5.004	5.844

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

(2) Total power input is sum of compressors and fans power input

(3) Ambient air temperature 7°C DB, 6°C WB; condenser inlet/outlet water temperature 40-45 °C

(4) Sound pressure values measured at 10 meter from the unit in free field conditions in compliance with ISO 3744

(5) Evaporator inlet/outlet water temperature 12-7 °C

(6) ST 2PS version

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

## KAPPA V EVO - TECHNICAL DATA R134A

Unit size	Note		80.2	85.2	90.2
<b>KAPPA V EVO - Cooling</b>					
Nominal capacity	(1)	kW	774,7	808,0	894,0
Total power input	(1),(2)	kW	274,8	282,3	314,7
EER	(1)		2,82	2,86	2,84
Quantity / Circuits		n°/n°	2 / 2	2 / 2	2 / 2
<b>Fans</b>					
Quantity		n°	10	12	12
Air flow		m <sup>3</sup> /h	206.000	262.000	262.000
<b>Evaporator</b>					
Pressure drop	(5)	kPa	59,1	51,8	61,5
<b>Hydraulic module</b>					
External available pressure	(6)	kPa	196,8	177,3	173,2
Tank capacity	(6)	l	900	900	900
Expansione vassel		l	25	25	25
<b>Sound level</b>					
Sound pressure value	(4)	dB(A)	63	63	65
Sound power value		dB(A)	104	104	105
Sound pressure value LN version	(4)	dB(A)	57	57	59
Sound power value LN version		dB(A)	98	98	99
<b>Basic unit size and weights</b>					
Length		mm	5.762	6.761	6.761
Width		mm	2.284	2.284	2.284
Height		mm	2.368	2.368	2.368
Operating weigh		kg	6.284	6.342	6.358

Unit size	Note		95.2	100.2	110.2
<b>KAPPA V EVO - Cooling</b>					
Nominal capacity	(1)	kW	915,7	931,7	1.077,9
Total power input	(1),(2)	kW	331,7	354,2	392,5
EER	(1)		2,76	2,63	2,75
Quantity / Circuits		n°/n°	2 / 2	2 / 2	2 / 2
<b>Fans</b>					
Quantity		n°	12	12	14
Air flow		m <sup>3</sup> /h	257.000	252.000	304.000
<b>Evaporator</b>					
Pressure drop	(5)	kPa	67,1	78,8	55,1
<b>Hydraulic module</b>					
External available pressure	(6)	kPa	192,0	181,3	161,3
Tank capacity	(6)	l	900	900	900
Expansione vassel		l	25	25	25
<b>Sound level</b>					
Sound pressure value	(4)	dB(A)	65	65	65
Sound power value		dB(A)	105	105	105
Sound pressure value LN version	(4)	dB(A)	59	59	79
Sound power value LN version		dB(A)	99	99	99
<b>Basic unit size and weights</b>					
Length		mm	6.761	6.761	7.661
Width		mm	2.284	2.284	2.284
Height		mm	2.368	2.368	2.368
Operating weigh		kg	6.880	6.986	7.368

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

(2) Total power input is sum of compressors and fans power input

(3) Ambient air temperature 7°C DB, 6°C WB; condenser inlet/outlet water temperature 40-45 °C

(4) Sound pressure values measured at 10 meter from the unit in free field conditions in compliance with ISO 3744

(5) Evaporator inlet/outlet water temperature 12-7 °C

(6) ST 2PS version

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

**KAPPA V EVO - TECHNICAL DATA R134A**

Unit size	Note		120.2	130.2	140.2
<b>KAPPA V EVO - Cooling</b>					
Nominal capacity	(1)	kW	1.272,3	1.306,6	1.361,3
Total power input	(1),(2)	kW	420,5	457,2	483,3
EER	(1)		3,03	2,86	2,82
Quantity / Circuits		n°/n°	2 / 2	2 / 2	2 / 2
<b>Fans</b>					
Quantity		n°	16	16	16
Air flow		m <sup>3</sup> /h	354.000	348.000	342.000
<b>Evaporator</b>					
Pressure drop	(5)	kPa	52,0	55,0	60,0
<b>Hydraulic module</b>					
External available pressure	(6)	kPa	-	-	-
Tank capacity	(6)	l	-	-	-
Expansione vassel		l	-	-	-
<b>Sound level</b>					
Sound pressure value	(4)	dB(A)	66	66	66
Sound power value		dB(A)	106	106	106
Sound pressure value LN version	(4)	dB(A)	60	60	60
Sound power value LN version		dB(A)	100	100	100
<b>Basic unit size and weights</b>					
Length		mm	9.623	9.263	9.263
Width		mm	2.284	2.284	2.284
Height		mm	2.368	2.368	2.368
Operating weigh		kg	9.865	9.152	9.152

Unit size	Note		160.4
<b>KAPPA V EVO - Cooling</b>			
Nominal capacity	(1)	kW	1.551,1
Total power input	(1),(2)	kW	548,7
EER	(1)		2,83
Quantity / Circuits		n°/n°	4 / 4
<b>Fans</b>			
Quantity		n°	20
Air flow		m <sup>3</sup> /h	412.000
<b>Evaporator</b>			
Pressure drop	(5)	kPa	59,2
<b>Hydraulic module</b>			
External available pressure	(6)	kPa	-
Tank capacity	(6)	l	-
Expansione vassel		l	-
<b>Sound level</b>			
Sound pressure value	(4)	dB(A)	66
Sound power value		dB(A)	106
Sound pressure value LN version	(4)	dB(A)	60
Sound power value LN version		dB(A)	100
<b>Basic unit size and weights</b>			
Length		mm	11.123
Width		mm	2.284
Height		mm	2.368
Operating weigh		kg	12.548

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

(2) Total power input is sum of compressors and fans power input

(3) Ambient air temperature 7°C DB, 6°C WB; condenser inlet/outlet water temperature 40-45 °C

(4) Sound pressure values measured at 10 meter from the unit in free field conditions in compliance with ISO 3744

(5) Evaporator inlet/outlet water temperature 12-7 °C

(6) ST 2PS version

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