

WRL 026H - 161H

Reversible water-cooled heat pump, gas side

Cooling capacity 6 ÷ 40 kW
Heating capacity 8 ÷ 48 kW

- High efficiency
- Production of hot water up to 60 °C
- Production of domestic hot water priority
- Suitable for geothermal applications



DESCRIPTION

Water cooled heat pump, for chilled and heated water production, refrigerant side, designed to meet air conditioning needs of residential and commercial buildings, or refrigeration needs of industrial applications. Indoor units with hermetic scroll compressors and plate heat exchangers. In the configuration with desuperheater, it is also possible to produce free-hot water.

The technological choices made, always oriented to the highest quality, ensure very easy installation. In fact the electrical and hydraulic connections are all located in the upper part of the unit, facilitating the installation and maintenance operations and also reducing the technical gaps and their position in as little space as possible.

VERSIONS

° Without storage tank

A With storage tank

FEATURES

Operating field

Operation at full power with domestic hot water for the system up to 60 °C. (for more information, refer to the technical documentation).

Plug and play

All the units are equipped with scroll compressors and plate heat exchangers; the base and panelling are made of steel treated with RAL 9003 polyester paints.

The electric and hydraulic connections are all located on the upper part of the unit facilitating installation and maintenance. This allows reduced plant room space and installation in the smallest space possible.

The heat pump can be supplied with all the components required for its installation in new systems and to replace other heat generators. It can be combined with low temperature emission systems such as floor heating or fan coils, but also with conventional radiators.

Version with Integrated hydronic kit

The standard unit is supplied with a water filter, differential pressure switch and safety valve already installed on the service and source side (and also on the recovery side, if present).

To obtain a solution that offers economic savings and facilitates installation, these units can be configured with an integrated hydronic kit on both hydraulic sides (service and source).

Low-head and high-head pumps are available, along with a modulating 2-way valve that can only be applied on the source side to reduce consumption in applications with groundwater.

CONTROL MPC

Microprocessor control, with keyboard and LCD display, for easy access on the unit with a menu available in several languages.

- Possibility to control two units in a Master-Slave configuration
- The presence of a programmable timer allows functioning time periods and a possible second set-point to be set.
- The temperature control takes place with the integral proportional logic, based on the water output temperature.

ACCESSORIES

AER485P1: RS-485 interface for supervising systems with MODBUS protocol. 1 accessory is provided for each unit control board.

AERBACP: Ethernet communication interface for Bacnet/IP and Modbus TCP/IP protocols. 1 accessory is provided for each unit control board.

KSAE: External air sensor.

PGD1: Allows you to control the unit at a distance.

SGD: Electronic expansion that enables connecting to the photovoltaic system and heat pumps to accumulate heat in the DHW tank or in the heating system during the photovoltaic production phase and release it at times when heating demand is highest.

SSM: Probe to be used with the mixer valve in applications with radiant panels. The probe requires the VMF-CRP area accessory as well.

TAH: Ambient terminal with temperature and humidity probe - 230V AC flush-mounting model that can command an On-Off valve or a zone pump and dehumidifier consent.

TAT: Ambient terminal with temperature probe - 230V AC flush-mounting model that can command an On-Off valve or a zone pump.

VMF-CRP: Accessory module for controlling boilers, heat recover units and pumps (if associated with VMF-E5 / RCC panels); if associated with the VMF-E6 panel, the VMF-CRP modules will be able to manage heat recovery units, RAS, boiler, sanitary management, I/O control, pumps.

VPHL: Pressure switch valve with bypass solenoid valve, during cooling mode operation the bypass valve is closed so the water flows exclusively

through the circuit with the pressure switch. During heating mode operation the water flows through both branches of the circuit.

ACCESSORIES COMPATIBILITY

Model	026	031	041	051	071	081	101	141	161
AER485P1	*	*	*	*	*	*	*	*	*
AERBACP	*	*	*	*	*	*	*	*	*
KSAE	*	*	*	*	*	*	*	*	*
PGD1	*	*	*	*	*	*	*	*	*
SGD	*	*	*	*	*	*	*	*	*
SSM	*	*	*	*	*	*	*	*	*
TAH	*	*	*	*	*	*	*	*	*
TAT	*	*	*	*	*	*	*	*	*

Antivibration

Version	Integrated hydronic kit, source side	System side - pumps	026	031	041	051	071
°	°, B, I, U, V	°, N, P	VT9	VT9	VT9	VT9	VT9
A	°, B, I, U, V	°, N, P	VT15	VT15	VT15	VT15	VT15

Version	Integrated hydronic kit, source side	System side - pumps	081	101	141	161
°	°, B, I, U, V	°, N, P	VT9	VT15	VT15	VT15
A	°, B, I, U, V	°, N, P	VT15	VT15A	VT15A	VT15A

Pressure switch valve

Ver	026	031	041	051	071	081	101	141	161
°, A	VPHL1	VPHL1	VPHL2	VPHL2	VPHL3	VPHL3	VPHL4	VPHL4	VPHL4

CONFIGURATOR

Field	Description
1,2,3	WRL
4,5,6	Size 026, 031, 041, 051, 071, 081, 101, 141, 161
7	Operating field
X	Electronic thermostatic expansion valve
8	Model
H	Water cooled heat pump, reversible refrigerant side
9	Version
°	Without storage tank
A	With storage tank
10	Heat recovery
°	Without heat recovery
11	Integrated hydronic kit, source side
B	On-off pump (1)
I	Inverter pump (2)
U	Pump high head (3)
V	Applications with bore hole water
°	Without hydronic kit
12	System side - pumps
N	Pump high head (3)
P	Pump (4)
°	Without hydronic kit
13	Recovery side - pumps
°	Without hydronic kit
14	Soft-start
S	With soft-start
°	Without soft-start
15	Power supply
M	230V~ 50Hz (5)
°	400V~3N 50Hz

(1) For size WRL 051 ÷ 081. The speed of the inverter pump must be set upon commissioning, according to the useful static pressure required; once it has been set, the pump will work at a constant flow rate.

(2) Only for WRL 026 ÷ 081

(3) Only for WRL 101 ÷ 161

(4) In sizes WRL 026 ÷ 081, it's an inverter circulator; for other sizes, it's an on-off pump.

(5) Only for WRL 026 ÷ 041

PERFORMANCE SPECIFICATIONS 12 °C/ 7 °C - 40 °C/ 45 °C

WRL - (H°) - (400V 3N ~ 50Hz)

Size		026	031	041	051	071	081	101	141	161
Power supply: °										
Cooling performance 12 °C/ 7 °C (1)										
Cooling capacity	kW	6,3	8,1	10,4	13,7	17,8	20,3	27,6	35,4	40,4
Input power	kW	1,6	2,3	2,3	3,0	4,2	5,0	6,1	8,5	10,1
Cooling total input current	A	4,00	4,00	6,00	7,00	9,00	10,00	13,00	17,00	19,00
EER	W/W	3,98	3,47	4,52	4,51	4,18	4,08	4,49	4,15	4,01
Water flow rate source side	l/h	1.346	1.782	2.178	2.870	3.759	4.312	5.763	7.501	8.611
Pressure drop source side	kPa	13	16	19	20	24	27	28	37	44
Water flow rate system side	l/h	1.085	1.396	1.798	2.367	3.058	3.492	4.748	6.098	6.964
Pressure drop system side	kPa	9	11	13	14	16	18	20	24	29
Heating performance 40 °C/ 45 °C (2)										
Heating capacity	kW	7,9	9,5	12,4	16,4	20,9	24,0	32,7	41,7	47,6
Input power	kW	2,1	2,4	3,0	4,0	5,2	6,1	8,1	10,5	12,3
Heating total input current	A	4,80	4,80	6,60	8,30	10,00	12,00	16,00	20,00	23,00
COP	W/W	3,84	3,96	4,08	4,07	4,01	3,94	4,05	3,97	3,87
Water flow rate source side	l/h	1.714	2.086	2.759	3.635	4.611	5.291	7.248	9.196	10.445
Pressure drop source side	kPa	34	34	46	43	50	59	52	62	73
Water flow rate system side	l/h	1.364	1.644	2.151	2.842	3.616	4.165	5.669	7.217	8.246
Pressure drop system side	kPa	20	18	28	28	32	38	35	43	51

(1) Date 14511:2022; Water user side 12 °C/ 7 °C; Water source side 30 °C/ 35 °C

(2) Date 14511:2022; Water user side 40 °C/ 45 °C; Water source side 10 °C/ 7 °C

Technical data WRL (H°) - (230V ~ 50Hz)

Size		026	031	041	051	071	081	101	141	161
Power supply: M										
Cooling performance 12 °C/ 7 °C (1)										
Cooling capacity	kW	6,3	7,9	10,3	-	-	-	-	-	-
Input power	kW	1,7	1,9	2,4	-	-	-	-	-	-
Cooling total input current	A	9,00	11,00	14,00	-	-	-	-	-	-
EER	W/W	3,74	4,13	4,28	-	-	-	-	-	-
Water flow rate source side	l/h	1.363	1.678	2.179	-	-	-	-	-	-
Pressure drop source side	kPa	14	16	19	-	-	-	-	-	-
Water flow rate system side	l/h	1.085	1.362	1.781	-	-	-	-	-	-
Pressure drop system side	kPa	9	10	13	-	-	-	-	-	-
Heating performance 40 °C/ 45 °C (2)										
Heating capacity	kW	7,9	9,9	12,6	-	-	-	-	-	-
Input power	kW	2,1	2,6	3,3	-	-	-	-	-	-
Heating total input current	A	10,00	13,00	17,00	-	-	-	-	-	-
COP	W/W	3,85	3,89	3,82	-	-	-	-	-	-
Water flow rate source side	l/h	1.717	2.173	2.745	-	-	-	-	-	-
Pressure drop source side	kPa	34	36	46	-	-	-	-	-	-
Water flow rate system side	l/h	1.366	1.723	2.186	-	-	-	-	-	-
Pressure drop system side	kPa	20	22	29	-	-	-	-	-	-

(1) Date 14511:2022; Water user side 12 °C/ 7 °C; Water source side 30 °C/ 35 °C

(2) Date 14511:2022; Water user side 40 °C/ 45 °C; Water source side 10 °C/ 7 °C

PERFORMANCE SPECIFICATIONS 23 °C/ 18 °C - 30 °C/ 35 °C

WRL - (H°) - (400V 3N ~ 50Hz)

Size		026	031	041	051	071	081	101	141	161
Power supply: °										
Cooling performance 23 °C/ 18 °C (1)										
Cooling capacity	kW	8,3	10,0	13,5	17,5	23,9	27,4	34,9	47,8	54,5
Input power	kW	1,6	1,9	2,4	3,3	4,4	5,2	6,6	9,0	10,7
Cooling total input current	A	4,10	3,00	6,00	7,60	9,20	10,00	14,00	17,00	19,00
EER	W/W	5,22	5,34	5,54	5,35	5,39	5,25	5,31	5,32	5,11
Water flow rate source side	l/h	1.681	2.039	2.719	3.547	4.844	5.557	7.089	9.679	11.092
Pressure drop source side	kPa	20	21	30	31	40	45	42	62	73
Water flow rate system side	l/h	1.428	1.737	2.330	3.022	4.136	4.730	6.040	8.270	9.438
Pressure drop system side	kPa	16	17	22	23	29	33	32	44	53
Heating performance 30 °C/ 35 °C (2)										
Heating capacity	kW	8,1	10,1	13,0	17,0	22,6	25,8	34,1	45,0	50,8
Input power	kW	1,6	1,9	2,5	3,2	4,3	5,1	6,4	8,7	10,3
Heating total input current	A	3,70	3,70	5,20	6,40	8,40	9,70	12,00	16,00	19,00
COP	W/W	5,03	5,38	5,29	5,33	5,24	5,06	5,31	5,18	4,91
Water flow rate source side	l/h	1.397	1.751	2.246	2.934	3.893	4.456	5.888	7.770	8.761
Pressure drop source side	kPa	21	20	30	30	37	43	38	50	58
Water flow rate system side	l/h	1.901	2.418	3.098	4.045	5.363	6.102	8.125	10.710	11.951

(1) Date 14511:2022; Water user side 23 °C/ 18 °C; Water source side 30 °C/ 35 °C

(2) Date 14511:2022; Water user side 30 °C/ 35 °C; Water source side 10 °C/ 5 °C

Size		026	031	041	051	071	081	101	141	161
Pressure drop system side	kPa	42	46	58	53	68	78	65	84	95

(1) Date 14511:2022; Water user side 23 °C / 18 °C; Water source side 30 °C / 35 °C
(2) Date 14511:2022; Water user side 30 °C / 35 °C; Water source side 10 °C / 5 °C

WRL (H°) - (230V ~ 50Hz)

Size		026	031	041	051	071	081	101	141	161
------	--	-----	-----	-----	-----	-----	-----	-----	-----	-----

Power supply: M

Cooling performance 23 °C / 18 °C (1)

Cooling capacity	kW	8,3	10,1	13,3	-	-	-	-	-	-
Input power	kW	1,6	2,0	2,5	-	-	-	-	-	-
Cooling total input current	A	8,10	11,00	14,00	-	-	-	-	-	-
EER	W/W	5,05	5,18	5,27	-	-	-	-	-	-
Water flow rate source side	l/h	1.690	2.070	2.699	-	-	-	-	-	-
Pressure drop source side	kPa	22	24	29	-	-	-	-	-	-
Water flow rate system side	l/h	1.428	1.755	2.295	-	-	-	-	-	-
Pressure drop system side	kPa	16	17	22	-	-	-	-	-	-

Heating performance 30 °C / 35 °C (2)

Heating capacity	kW	8,2	10,2	13,1	-	-	-	-	-	-
Input power	kW	1,6	1,9	2,6	-	-	-	-	-	-
Heating total input current	A	8,10	9,70	13,00	-	-	-	-	-	-
COP	W/W	5,05	5,27	5,01	-	-	-	-	-	-
Water flow rate source side	l/h	1.409	1.767	2.263	-	-	-	-	-	-
Pressure drop source side	kPa	21	23	31	-	-	-	-	-	-
Water flow rate system side	l/h	1.919	2.430	3.082	-	-	-	-	-	-
Pressure drop system side	kPa	42	45	58	-	-	-	-	-	-

(1) Date 14511:2022; Water user side 23 °C / 18 °C; Water source side 30 °C / 35 °C
(2) Date 14511:2022; Water user side 30 °C / 35 °C; Water source side 10 °C / 5 °C

ENERGY INDICES (REG. 2016/2281 EU)

Below are the energy performance indices of the standard versions, without storage tanks and pumps.

For all other configurations, please refer to the Magellano selection software.

WRL - (H°) - (400V 3N ~ 50Hz)

Size		026	031	041	051	071	081	101	141	161
------	--	-----	-----	-----	-----	-----	-----	-----	-----	-----

Power supply: M

SEER - 12/7 (EN14825: 2018)

SEER	W/W	3,48	3,80	4,15	-	-	-	-	-	-
Seasonal efficiency	%	136,20	148,80	163,10	-	-	-	-	-	-
Water Regulation (1)	type	FW/VO-FW	FW/VO-FW	FW/VO-FW	-	-	-	-	-	-

Performance in average ambient conditions (average) - 35 °C (2)

Efficiency energy class		A+++	A+++	A+++	-	-	-	-	-	-
Pdesignh	kW	11,00	14,00	17,00	-	-	-	-	-	-
SCOP	W/W	5,15	5,50	5,18	-	-	-	-	-	-
ηsh	%	198,00	212,00	199,00	-	-	-	-	-	-
Water Regulation (1)	type	FW/VO-FW	FW/VO-FW	FW/VO-FW	-	-	-	-	-	-

Performance in average ambient conditions (average) - 55 °C (3)

Efficiency energy class		A++	A++	A++	-	-	-	-	-	-
Pdesignh	kW	10,00	13,00	16,00	-	-	-	-	-	-
SCOP	W/W	3,75	3,83	3,75	-	-	-	-	-	-
ηsh	%	142,00	145,00	142,00	-	-	-	-	-	-
Water Regulation (1)	type	FW/VO-FW	FW/VO-FW	FW/VO-FW	-	-	-	-	-	-

(1) VW/VO - variable water flow rate/variable outlet temperature; FW/VO - fixed water flow rate/variable outlet temperature; VW/FO - variable water flow rate/fixed outlet temperature; FW/FO - fixed water flow rate/fixed outlet temperature.

(2) Efficiencies for low temperature applications (35 °C)

(3) Efficiencies for average temperature applications (55 °C)

Size		026	031	041	051	071	081	101	141	161
------	--	-----	-----	-----	-----	-----	-----	-----	-----	-----

Power supply: °

SEER - 12/7 (EN14825: 2018)

SEER	W/W	3,64	3,39	4,31	4,53	4,20	4,13	4,81	4,49	4,36
Seasonal efficiency	%	142,70	132,40	169,40	178,10	165,10	162,30	189,40	176,50	171,40
Water Regulation (1)	type	FW/VO-FW	FW/VO-FW	FW/VO-FW	FW/VO-FW	FW/VO-FW	FW/VO-FW	FW/VO-FW	FW/VO-FW	FW/VO-FW

Performance in average ambient conditions (average) - 35 °C (2)

Efficiency energy class		A+++	A+++	A+++	A+++	A+++	A+++	A+++	A+++	A+++
Pdesignh	kW	11,00	14,00	17,00	23,00	30,00	35,00	45,00	60,00	68,00
SCOP	W/W	5,08	5,45	5,38	5,50	5,48	5,33	6,03	5,85	5,50
ηsh	%	195,00	210,00	207,00	212,00	211,00	205,00	233,00	226,00	212,00
Water Regulation (1)	type	FW/VO-FW	FW/VO-FW	FW/VO-FW	FW/VO-FW	FW/VO-FW	FW/VO-FW	FW/VO-FW	FW/VO-FW	FW/VO-FW

Performance in average ambient conditions (average) - 55 °C (3)

Efficiency energy class		A++	A++	A+++	A+++	A+++	A+++	A+++	A+++	A+++
Pdesignh	kW	10,00	12,00	16,00	21,00	26,00	31,00	42,00	53,00	61,00

(1) VW/VO - variable water flow rate/variable outlet temperature; FW/VO - fixed water flow rate/variable outlet temperature; VW/FO - variable water flow rate/fixed outlet temperature; FW/FO - fixed water flow rate/fixed outlet temperature.

(2) Efficiencies for low temperature applications (35 °C)

(3) Efficiencies for average temperature applications (55 °C)

Size		026	031	041	051	071	081	101	141	161
SCOP	W/W	3,73	3,83	3,98	4,00	3,98	3,95	4,58	4,53	4,38
η_{sh}	%	141,00	145,00	151,00	152,00	151,00	150,00	175,00	173,00	167,00
Water Regulation (1)	type	FW/VO-FW	FW/VO-FW	FW/VO-FW	FW/VO-FW	FW/VO-FW	FW/VO-FW	FW/VO-FW	FW/VO-FW	FW/VO-FW

(1) VW/VO - variable water flow rate/variable outlet temperature; FW/VO - fixed water flow rate/variable outlet temperature; VW/FO - variable water flow rate/fixed outlet temperature; FW/FO - fixed water flow rate/fixed outlet temperature.
(2) Efficiencies for low temperature applications (35 °C)
(3) Efficiencies for average temperature applications (55 °C)

ELECTRIC DATA

Size		026	031	041	051	071	081	101	141	161
Power supply: °										
Electric data										
Maximum current (FLA)	A	8,5	9,0	11,0	13,0	20,0	23,0	23,0	37,0	43,0
Peak current (LRA)	A	34,0	37,0	50,0	66,0	75,0	75,0	88,0	91,0	94,0

Size		026	031	041	051	071	081	101	141	161
Power supply: M										
Electric data										
Maximum current (FLA)	A	19,0	22,0	26,0	-	-	-	-	-	-
Peak current (LRA)	A	63,0	84,0	99,0	-	-	-	-	-	-

GENERAL TECHNICAL DATA

Refrigerant circuit

Size		026	031	041	051	071	081	101	141	161
Power supply: M										
Compressor										
Type	type	Scroll	Scroll	Scroll	-	-	-	-	-	-
Compressor regulation	Type	On-Off	On-Off	On-Off	-	-	-	-	-	-
Number	no.	1	1	1	-	-	-	-	-	-
Circuits	no.	1	1	1	-	-	-	-	-	-
Refrigerant	type	R410A	R410A	R410A	-	-	-	-	-	-
Total refrigerant charge (1)	kg	1,11	1,25	1,50	-	-	-	-	-	-
Potential global heating (GWP)		2088	2088	2088	-	-	-	-	-	-
Equivalent CO ₂	tCO ₂ eq	2,32	2,61	3,13	-	-	-	-	-	-

(1) The load indicated in the table is an estimated and preliminary value. The final value of the refrigerant load is indicated on the unit's technical label. For further information contact the office.

Size		026	031	041	051	071	081	101	141	161
Power supply: °										
Compressor										
Type	type	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Compressor regulation	Type	On-Off	On-Off	On-Off	On-Off	On-Off	On-Off	On-Off	On-Off	On-Off
Number	no.	1	1	1	1	1	1	2	2	2
Circuits	no.	1	1	1	1	1	1	1	1	1
Refrigerant	type	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Total refrigerant charge (1)	kg	1,11	1,25	1,50	1,90	2,27	2,33	-	4,40	-
Potential global heating (GWP)		2088	2088	2088	2088	2088	2088	2088	2088	2088
Equivalent CO ₂	tCO ₂ eq	2,32	2,61	3,13	3,97	4,74	4,87	-	9,19	-

(1) The load indicated in the table is an estimated and preliminary value. The final value of the refrigerant load is indicated on the unit's technical label. For further information contact the office.

System side heat exchanger

Size		026	031	041	051	071	081	101	141	161
System side heat exchanger										
Type	°A type									
Number	°A no.	1	1	1	1	1	1	1	1	1
System side hydraulic connections										
Connections (in/out)	°A Type									
Sizes (in/out)	°A Ø									

Source side heat exchanger

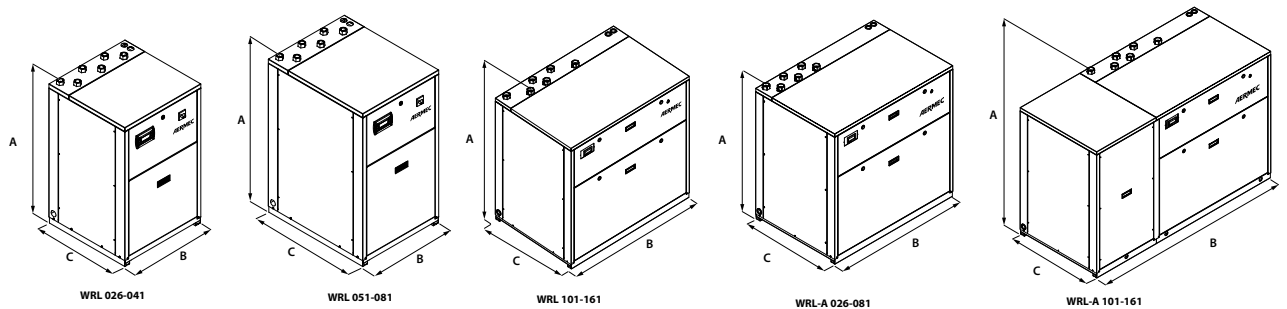
Size		026	031	041	051	071	081	101	141	161
Source side heat exchanger										
Type	°A type									
Number	°A no.	1	1	1	1	1	1	1	1	1
Connections (in/out)	°A Type									
Sizes (in/out)	°A Ø									

Sound data

Size		026	031	041	051	071	081	101	141	161
Sound data calculated in cooling mode (1)										
Sound power level	°A dB(A)	55,5	57,0	57,5	59,0	60,0	60,5	62,0	63,0	63,5

(1) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification. Sound pressure (cold functioning) measured in free field, 10m away from the unit external surface (in compliance with UNI EN ISO 3744).

DIMENSIONS



Size			026	031	041	051	071	081	101	141	161
Dimensions and weights											
A	°	mm	976	976	976	1.126	1.126	1.126	1.126	1.126	1.126
	A	mm	1.126	1.126	1.126	1.126	1.126	1.126	1.126	1.126	1.126
B	°	mm	605	605	605	605	605	605	1.155	1.155	1.155
	A	mm	1.155	1.155	1.155	1.155	1.155	1.155	1.755	1.755	1.755
C	°	mm	603	603	603	773	773	773	773	773	773
	A	mm	773	773	773	773	773	773	773	773	773
Empty weight	°	kg	120	125	130	150	170	180	260	270	280
	A	kg	190 (1)	200 (1)	210 (1)	230 (1)	250 (1)	260 (1)	340 (1)	350 (1)	360 (1)

(1) Units with two heat exchangers and storage tank, without pumps

Aermec reserves the right to make any modifications deemed necessary. All data is subject to change without notice. Aermec does not assume responsibility or liability for errors or omissions.

Aermec S.p.A.
Via Roma, 996 - 37040 Bevilacqua (VR) - Italia
Tel. 0442633111 - Telefax 044293577
www.aermec.com