

WRL 026 -161

Water cooled heat pump reversible water side

Cooling capacity 6,6 ÷ 44,2 kW
Heating capacity 7,5 ÷ 48,0 kW



- High efficiency
- Suitable for geothermal applications



DESCRIPTION

Water-water offering chilled/hot water, designed to meet air conditioning needs in residential/commercial complexes or 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 at the top of the unit making it easy to install and maintain, also reducing the technical areas and their placement in the smallest space possible.

VERSIONS

- ° Without storage tank
- A With storage tank

FEATURES

Operating field

Full-load operation with the production of chilled water 4-18°C, and the possibility to produce also negative temperature water down to -8°C for the evaporator and hot water for the condenser up to 55 °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.

MODUCONTROL CONTROL

The command panel of the unit allows the rapid setting of the working parameters of the machine, and their visualisation. The display consists of 4 figures and various LEDs for indicating the type of operational mode, the visualisation of the parameters set and of any alarms triggered. The card stores all the default settings and any modifications.

The regulation using an outside air temperature sensor (accessory) allows a dynamic control of the water temperature produced by increasing the energy efficiency of the system.

ACCESSORIES

AERBAC-MODU: Ethernet communication Interface for protocols Bacnet/IP and Modbus TCP/IP. The accessory is supplied with the unit and must be installed on an external electrical panel.

AERSET: It makes it possible to automatically compensate for the operation setting of the unit to which it is connected, based on a 0-10V MODBUS input signal. Mandatory accessory MODU-485BL.

KSAE: External air sensor.

MODU-485BL: RS-485 interface for supervision systems with MODBUS protocol.

PR3: Simplified remote panel. This makes it possible to carry out the unit's basic controls with the signalling of alarms. Can be made remote with shielded cable up to 150 m.

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.

VT: Anti-vibration supports.

VPL: Pressure switch valve complete with connections, piloted directly in relation to condensation pressure; the valve modulates the volume of water needed to cool the condenser, thereby maintaining the condensation temperature unchanged.

PR4: Remote panel with LCD display and touch keyboard that allows carrying out the basic controls, the programming of time ranges and the signaling of the alarms of a single unit.

■ For the installation of the PR4 remote panel, the MODU-485BL communication interface is indispensable.

ACCESSORIES COMPATIBILITY

Model	Ver	026	031	041	051	071	081	101	141	161
AERBAC-MODU	°A	•	•	•	•	•	•	•	•	•
AERSET	°A	•	•	•	•	•	•	•	•	•
KSAE	°A	•	•	•	•	•	•	•	•	•
MODU-485BL	°A	•	•	•	•	•	•	•	•	•
PR3	°A	•	•	•	•	•	•	•	•	•
SGD	°A	•	•	•	•	•	•	•	•	•

Antivibration

Version	Integrated hydronic kit, source side	System side - pumps	026	031	041	051	071
°	°	°	VT9	VT9	VT9	VT9	VT9
°	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
°	°	°	VT9	VT15	VT15	VT15
°	U	N, P	VT9	VT15	VT15	VT15
°	B, I, V	N, P	VT9	VT15	VT15	-
A	°B, I, U, V	°N, P	VT15	VT15A	VT15A	VT15A

- not available

PR4

Model	Ver	026	031	041	051	071	081	101	141	161
PR4	°A	•	•	•	•	•	•	•	•	•

Pressure switch valve

Ver	026	031	041	051	071	081	101	141	161
°A	VPL1	VPL1	VPL2	VPL2	VPL3	VPL3	VPL4	VPL4	VPL4

CONFIGURATOR

Configuration options

Field	Description
1,2,3	WRL
4,5,6	Size 026, 031, 041, 051, 071, 081, 101, 141, 161
7	Operating field
Y	Low temperature mechanic thermostatic valve (1)
°	Standard mechanic thermostatic valve (2)
8	Model
E	Evaporating unit (3)
°	Heat pump reversible on the water side
9	Version
°	Without storage tank
A	With storage tank
10	Heat recovery
D	With desuperheater
°	Without heat recovery
11	Integrated hydronic kit, source side
B	On-off pump (4)
I	Inverter pump (5)
U	Pump high head (6)

Field	Description
Applications with bore hole water	
V	2-way modulating valve
°	Without hydronic kit
12	System side - pumps
N	Pump high head (6)
P	On-off pump (4)
°	Without hydronic kit
13	Recovery side - pumps
°	Without Pumps
14	Soft-start
S	With soft-start
°	Without soft-start
15	Power supply
M	230V~50Hz (7)
°	400V~3N 50Hz

(1) Water produced from 4 °C ÷ - 8 °C

(2) Water produced from 4 °C ÷ 18 °C

(3) Shipped with holding charge only

(4) 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.

(5) Only for WRL 026 ÷ 081

(6) Only for WRL 101 ÷ 161

(7) Only for WRL 026 ÷ 041

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

WRL - °

Size		026	031	041	051	071	081	101	141	161
Power supply: M										
Cooling performance 12 °C / 7 °C (1)										
Cooling capacity	kW	6,6	8,3	11,3	-	-	-	-	-	-
Input power	kW	1,5	1,8	2,5	-	-	-	-	-	-
Cooling total input current	A	7,20	9,20	12,00	-	-	-	-	-	-
EER	W/W	4,30	4,50	4,56	-	-	-	-	-	-
Water flow rate source side	l/h	1.386	1.731	2.359	-	-	-	-	-	-
Pressure drop source side	kPa	28	29	36	-	-	-	-	-	-
Water flow rate system side	l/h	1.137	1.430	1.955	-	-	-	-	-	-
Pressure drop system side	kPa	15	17	23	-	-	-	-	-	-
Heating performance 40 °C / 45 °C (2)										
Heating capacity	kW	7,6	9,4	12,5	-	-	-	-	-	-
Input power	kW	2,0	2,4	3,1	-	-	-	-	-	-
Heating total input current	A	9,30	12,00	15,00	-	-	-	-	-	-
COP	W/W	3,86	3,89	4,05	-	-	-	-	-	-
Water flow rate source side	l/h	1.662	2.053	2.778	-	-	-	-	-	-
Pressure drop source side	kPa	32	35	46	-	-	-	-	-	-
Water flow rate system side	l/h	1.319	1.626	2.171	-	-	-	-	-	-
Pressure drop system side	kPa	25	26	30	-	-	-	-	-	-

(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

Size		026	031	041	051	071	081	101	141	161
Power supply: °										
Cooling performance 12 °C / 7 °C (1)										
Cooling capacity	kW	6,7	8,4	11,3	14,7	19,3	21,9	29,5	38,5	43,9
Input power	kW	1,5	1,8	2,6	3,1	4,0	4,7	6,2	8,1	9,5
Cooling total input current	A	3,10	2,60	4,90	6,40	7,40	9,10	13,00	15,00	18,00
EER	W/W	4,49	4,74	4,39	4,70	4,77	4,63	4,72	4,75	4,62
Water flow rate source side	l/h	1.396	1.735	2.375	3.054	3.978	4.538	6.100	7.947	9.077
Pressure drop source side	kPa	28	30	35	32	40	46	42	57	66
Water flow rate system side	l/h	1.154	1.447	1.955	2.541	3.320	3.770	5.078	6.638	7.555
Pressure drop system side	kPa	15	17	23	21	26	30	25	34	38
Heating performance 40 °C / 45 °C (2)										
Heating capacity	kW	7,7	9,3	12,6	16,3	21,0	24,0	32,5	42,1	48,0
Input power	kW	1,9	2,3	3,2	4,0	5,1	5,9	8,0	10,2	12,0
Heating total input current	A	4,10	3,40	6,10	8,20	9,20	11,00	16,00	18,00	23,00
COP	W/W	3,93	4,04	3,94	4,05	4,17	4,04	4,06	4,14	4,02
Water flow rate source side	l/h	1.680	2.053	2.767	3.602	4.708	5.325	7.200	9.414	10.671
Pressure drop source side	kPa	32	34	46	42	52	60	50	68	76
Water flow rate system side	l/h	1.326	1.607	2.181	2.819	3.647	4.159	5.629	7.284	8.315
Pressure drop system side	kPa	25	26	30	27	34	39	36	48	55

(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

WRL ABP

Size		026	031	041	051	071	081	101	141	161
Power supply: M										
Cooling performance 12 °C / 7 °C (1)										
Cooling capacity	kW	6,7	8,4	11,4	-	-	-	-	-	-
Input power	kW	1,5	1,8	2,4	-	-	-	-	-	-
Cooling total input current	A	7,80	9,90	12,00	-	-	-	-	-	-
EER	W/W	4,54	4,75	4,80	-	-	-	-	-	-
Water flow rate source side	l/h	1.386	1.731	2.359	-	-	-	-	-	-
Useful head source side	kPa	59	54	36	-	-	-	-	-	-
Water flow rate system side	l/h	1.137	1.430	1.955	-	-	-	-	-	-
Useful head system side	kPa	74	70	56	-	-	-	-	-	-
Heating performance 40 °C / 45 °C (2)										
Heating capacity	kW	7,5	9,3	12,4	-	-	-	-	-	-
Input power	kW	1,9	2,3	3,0	-	-	-	-	-	-
Heating total input current	A	9,90	13,00	15,00	-	-	-	-	-	-
COP	W/W	3,97	4,01	4,17	-	-	-	-	-	-
Water flow rate source side	l/h	1.662	2.053	2.778	-	-	-	-	-	-
Useful head source side	kPa	52	43	16	-	-	-	-	-	-
Water flow rate system side	l/h	1.319	1.626	2.171	-	-	-	-	-	-
Useful head system side	kPa	63	59	45	-	-	-	-	-	-

(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

Size		026	031	041	051	071	081	101	141	161
Power supply: °										
Cooling performance 12 °C / 7 °C (1)										
Cooling capacity	kW	6,8	8,5	11,4	14,9	19,4	22,0	29,8	38,9	44,2
Input power	kW	1,4	1,7	2,5	3,1	3,9	4,6	6,3	8,1	9,4
Cooling total input current	A	3,70	3,30	5,60	7,50	8,60	10,00	14,00	17,00	20,00
EER	W/W	4,75	5,02	4,62	4,84	4,93	4,78	4,75	4,79	4,69
Water flow rate source side	l/h	1.396	1.735	2.375	3.054	3.978	4.538	6.100	7.947	9.077
Useful head source side	kPa	59	53	36	63	43	28	116	137	125
Water flow rate system side	l/h	1.154	1.447	1.955	2.541	3.320	3.770	5.078	6.638	7.555
Useful head system side	kPa	74	70	56	79	66	56	148	164	157
Heating performance 40 °C / 45 °C (2)										
Heating capacity	kW	7,6	9,2	12,5	16,1	20,9	23,8	32,2	41,6	47,6
Input power	kW	1,9	2,2	3,1	3,9	4,9	5,8	8,0	10,1	11,8
Heating total input current	A	4,70	4,00	6,70	9,30	10,00	13,00	18,00	20,00	25,00
COP	W/W	4,05	4,17	4,05	4,11	4,24	4,09	4,01	4,13	4,04
Water flow rate source side	l/h	1.680	2.053	2.767	3.602	4.708	5.325	7.200	9.414	10.671
Useful head source side	kPa	52	43	16	46	20	4	90	121	109
Water flow rate system side	l/h	1.326	1.607	2.181	2.819	3.647	4.159	5.629	7.284	8.315
Useful head system side	kPa	63	59	46	70	54	41	130	148	138

(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

ENERGY INDICES (REG. 2016/2281 EU)

WRL - °

Size		026	031	041	051	071	081	101	141	161
Power supply: M										
SEER - 12/7 (EN14825: 2018)										
SEER	W/W	3,77	4,13	4,27	-	-	-	-	-	-
Seasonal efficiency	%	147,90	162,00	167,60	-	-	-	-	-	-
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	3,93	4,29	4,13	4,51	4,66	4,52	4,93	4,93	4,75
Seasonal efficiency	%	154,00	168,50	162,10	177,30	183,30	177,80	194,10	194,00	187,10
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
SCOP	W/W	3,73	3,83	3,98	4,00	3,98	3,95	4,58	4,53	4,38
ηsh	%	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)

PERFORMANCE SPECIFICATIONS EVAPORATING UNITS

Size			026	031	041	051	071	081	101	141	161
Power supply: M											
Cooling performance 12 °C / 7 °C (1)											
Cooling capacity	°	kW	6,6	8,3	11,3	-	-	-	-	-	-
	A	kW	6,7	8,4	11,4	-	-	-	-	-	-
Input power	°	kW	1,5	1,8	2,5	-	-	-	-	-	-
	A	kW	1,5	1,8	2,4	-	-	-	-	-	-
Cooling total input current	°	A	7,20	9,20	12,00	-	-	-	-	-	-
	A	A	7,80	9,90	12,00	-	-	-	-	-	-
EER	°	W/W	4,30	4,50	4,56	-	-	-	-	-	-
	A	W/W	4,54	4,75	4,80	-	-	-	-	-	-
Water flow rate system side	°A	l/h	1.137	1.430	1.955	-	-	-	-	-	-
Pressure drop system side	°A	kPa	15	17	23	-	-	-	-	-	-

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

Size			026	031	041	051	071	081	101	141	161
Power supply: °											
Cooling performance 12 °C / 7 °C (1)											
Cooling capacity	°	kW	6,7	8,4	11,3	14,7	19,3	21,9	29,5	38,5	43,9
	A	kW	6,8	8,5	11,4	14,9	19,4	22,0	29,8	38,9	44,2
Input power	°	kW	1,5	1,8	2,6	3,1	4,0	4,7	6,2	8,1	9,5
	A	kW	1,4	1,7	2,5	3,1	3,9	4,6	6,3	8,1	9,4
Cooling total input current	°	A	3,10	2,60	4,90	6,40	7,40	9,10	13,00	15,00	18,00
	A	A	3,70	3,30	5,60	7,50	8,60	10,00	14,00	17,00	20,00
EER	°	W/W	4,49	4,74	4,39	4,70	4,77	4,63	4,72	4,75	4,62
	A	W/W	4,75	5,02	4,62	4,84	4,93	4,78	4,75	4,79	4,69
Water flow rate system side	°A	l/h	1.154	1.447	1.955	2.541	3.320	3.770	5.078	6.638	7.555
Pressure drop system side	°A	kPa	15	17	23	21	26	30	25	34	38

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

ELECTRIC DATA

Electric data

Size			026	031	041	051	071	081	101	141	161
Electric data											
Maximum current (FLA)	°	A	8,0	8,0	15,0	17,0	21,0	22,0	32,0	40,0	41,0
	M	A	18,0	21,0	34,0	-	-	-	-	-	-
Peak current (LRA)	°	A	34,0	37,0	65,0	75,0	75,0	75,0	90,0	94,0	95,0
	M	A	63,0	84,0	119,0	-	-	-	-	-	-

GENERAL TECHNICAL DATA

Refrigerant circuit

Size			026	031	041	051	071	081	101	141	161
Power supply: °											
Compressor											
Type		type	Scroll								
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								
Total refrigerant charge (1)		kg	0,81	1,05	1,21	1,59	1,85	1,95	3,30	-	-
Potential global heating (GWP)			2088								
Equivalent CO ₂		tCO ₂ eq	1,70	2,20	2,53	3,32	3,87	4,08	6,90	-	-

(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	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate
Number	°A	no.	1	1	1	1	1	1	1	1	1
System side hydraulic connections											
Connections (in/out)	°A	Type	Gas-F	Gas-F	Gas-F	Gas-F	Gas-F	Gas-F	Gas-F	Gas-F	Gas-F
Sizes (in/out)	°A	Ø	1" 1/4	1" 1/4	1" 1/4	1" 1/4	1" 1/4	1" 1/4	1" 1/4	1" 1/4	1" 1/4

Source side heat exchanger

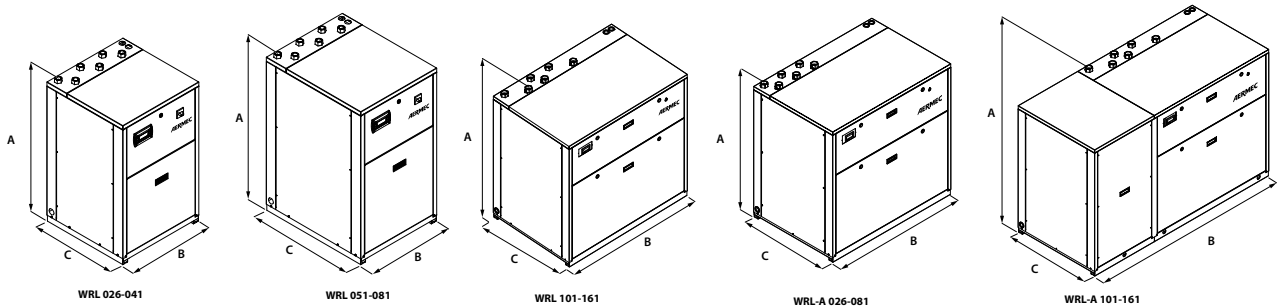
Size			026	031	041	051	071	081	101	141	161
Source side heat exchanger											
Type	°A	type	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate	Brazed plate
Number	°A	no.	1	1	1	1	1	1	1	1	1
Source side hydraulic connections											
Connections (in/out)	°A	Type	Gas-F	Gas-F	Gas-F	Gas-F	Gas-F	Gas-F	Gas-F	Gas-F	Gas-F
Sizes (in/out)	°A	Ø	1" 1/4	1" 1/4	1" 1/4	1" 1/4	1" 1/4	1" 1/4	1" 1/4	1" 1/4	1" 1/4

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	63,5

(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
	A	mm	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
	A	mm	1.155	1.155	1.155	1.155	1.155	1.155	1.755	1.755
C	°	mm	603	603	603	773	773	773	773	773
	A	mm	773	773	773	773	773	773	773	773
Empty weight	°	kg	120	125	130	150	170	180	260	280
	A	kg	190 (1)	200 (1)	210 (1)	230 (1)	250 (1)	260 (1)	340 (1)	350 (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.

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