WRL 180H - 650H

Reversible water-cooled heat pump, gas side

Cooling capacity 44,9 ÷ 157,4 kW
Heating capacity 53,0 ÷ 183,3 kW

- **High efficiency**
- **Suitable for geothermal applications**
- **Production of hot water up to 55 °C**

EUROVENT CERTIFIED PERFORMANCE
www.eurovent-certification.com

DESCRIPTION

Water-water offering chilled/hot water, designed to mit 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 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.

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.

CONTROL MPC

Microprocessor adjustment, with keyboard and LCD display,for easy access on the unit is 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 supervision systems with MODBUS protocol.
AERNET: The device allows the control, the management and the remote monitoring of a Chiller with a PC, smartphone or tablet using Cloud connection. AERNET works as Master while every unit connected is configured as Slave (max. 6 unit); also, with a simple click is possible to save a log file with all the connected unit datas in the personal terminal for post analysis.
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.
VT: Anti-vibration supports.

ACCESSORIES COMPATIBILITY

Model	Ver	180	200	300	400	500	550	600	650
AER485P1	°	•	•	•	•	•	•	•	•
AERNET	°	•	•	•	•	•	•	•	•
KSAE	°	•	•	•	•	•	•	•	•
PGD1	°	•	•	•	•	•	•	•	•
SGD	°	•	•	•	•	•			
SSM	°	•	•	•	•	•	•	•	•
TAH	°	•	•	•	•	•	•	•	•
TAT	°	•	•	•	•	•	•	•	•
VMF-CRP	°	•	•	•	•	•	•	•	•

Antivibration

Version	System side - pumps	Integrated hydronic kit, source side	180	200	300	400	500	550	600	650
°	°,N,P	°,B,F,I,U,V	VT9	VT9	VT9	VT9	VT15	VT15	VT15	VT15

CONFIGURATOR

Field		Description
1,2,3		**WRL**
4,5,6		**Size** 180, 200, 300, 400, 500, 550, 600, 650
7		**Operating field**
	°	Standard mechanic thermostatic valve (1)
	X	Electronic thermostatic expansion valve
	Y	Low temperature mechanic thermostatic valve (2)
8		**Model**
	H	Reversible heat pump, gas side
9		**Version**
	°	Standard
10		**Heat recovery**
	°	Without heat recovery
	D	With desuperheater
11		**Integrated hydronic kit, source side**
	°	Without hydronic kit
	B	On-off pump
	F	Single low-head inverter pump
	I	High-head inverter pump
	U	Pump high head
		Applications with bore hole water
	V	2-way modulating valve
12		**System side - pumps**
	°	Without hydronic kit
	N	Pump high head
	P	Pump low head
13		**Field for future development**
	°	Field for future development
14		**Soft-start**
	°	Without soft-start
	S	With soft-start
15		**Power supply**
	°	400V ~ 3N 50Hz

(1) Water produced from 4 °C ÷ 18 °C
(2) Water produced from 4 °C ÷ - 8 °C

PERFORMANCE SPECIFICATIONS

WRL - °

Size			180	200	300	400	500	550	600	650
Cooling performance 12 °C / 7 °C (1)										
Cooling capacity	°	kW	44,9	59,6	64,8	79,5	93,0	120,1	140,1	157,4
Input power	°	kW	10,8	14,7	16,3	18,6	20,1	27,6	31,4	35,8
Cooling total input current	°	A	20,0	25,0	28,0	32,0	36,0	52,0	60,0	69,0
EER	°	W/W	4,15	4,06	3,97	4,27	4,63	4,34	4,46	4,39
Water flow rate source side	°	l/h	9520	12659	13823	16682	19331	25177	29250	32920
Pressure drop source side	°	kPa	31	52	51	74	34	56	57	71
Water flow rate system side	°	l/h	7732	10274	11168	13711	16013	20686	24139	27112
Pressure drop system side	°	kPa	22	37	36	52	25	40	40	38
Heating performance 40 °C / 45 °C (2)										
Heating capacity	°	kW	53,0	70,9	76,6	92,6	106,4	143,7	164,2	183,3
Input power	°	kW	12,9	17,7	19,1	22,6	24,0	33,1	37,2	42,7
Heating total input current	°	A	23,0	29,0	31,0	37,0	41,0	56,0	64,0	74,0
COP	°	W/W	4,10	4,00	4,01	4,10	4,44	4,34	4,41	4,30
Water flow rate source side	°	l/h	11777	15734	17011	20840	24211	32704	37512	41689
Pressure drop source side	°	kPa	49	89	92	132	61	107	101	126
Water flow rate system side	°	l/h	9190	12277	13264	16046	18452	24913	28485	31788
Pressure drop system side	°	kPa	30	52	49	72	32	58	56	70

(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

ELECTRIC DATA

Size			180	200	300	400	500	550	600	650
Electric data										
Maximum current (FLA)	°	A	32,6	41,8	45,2	52,1	59,0	99,0	112,0	125,0
Peak current (LRA)	°	A	119,0	123,0	125,0	167,0	174,0	265,0	310,0	323,0

ENERGY INDICES (REG. 2016/2281 EU)

Size			180	200	300	400	500	550	600	650
SEER - 12/7 (EN14825: 2018) (1)										
SEER	°	W/W	4,25	4,04	4,15	4,38	5,04	4,62	4,80	4,69
Seasonal efficiency	°	%	166,9%	158,5%	162,8%	172,3%	198,4%	181,7%	188,9%	184,5%
UE 813/2013 performance in average ambient conditions (average) - 55 °C - Pdesignh ≤ 400 kW (2)										
Pdesignh	°	kW	68	91	98	119	137	185	212	236
ηsh	°	%	173.0%	170.0%	170.0%	175.0%	189.0%	186.0%	189.0%	184.0%
SCOP	°	W/W	4,53	4,45	4,45	4,58	4,93	4,85	4,93	4,80
Efficiency energy class	°		A+++	-	-	-	-	-	-	-
UE 813/2013 performance in average ambient conditions (average) - 35 °C - Pdesignh ≤ 400 kW (3)										
Pdesignh	°	kW	79	-	-	-	-	-	-	-
ηsh	°	%	222.0%	-	-	-	-	-	-	-
SCOP	°	W/W	5,75	-	-	-	-	-	-	-
Efficiency energy class	°		A+++	-	-	-	-	-	-	-

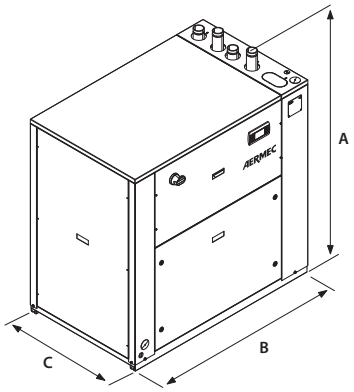
(1) Calculation performed with FIXED water flow rate and VARIABLE outlet temperature.
(2) Efficiencies for average temperature applications (55 °C)
(3) Efficiencies for low temperature applications (35 °C)

GENERAL TECHNICAL DATA

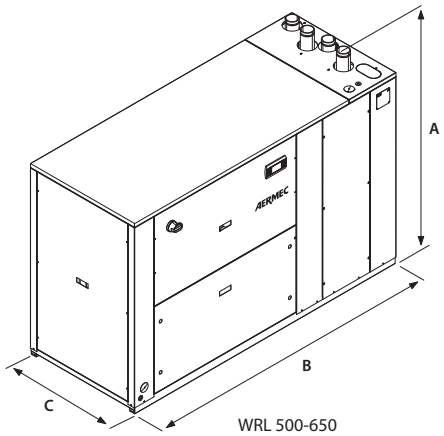
Size			180	200	300	400	500	550	600	650
Compressor										
Type	°	type				Scroll				
Compressor regulation	°	Type				On-Off				
Number	°	no.	2	2	2	2	2	2	2	2
Circuits	°	no.	1	1	1	1	1	1	1	1
Refrigerant	°	type				R410A				
Source side heat exchanger										
Type	°	type				Brazed plate				
Number	°	no.	1	1	1	1	1	1	1	1
System side heat exchanger										
Type	°	type				Brazed plate				
Number	°	no.	1	1	1	1	1	1	1	1
Source side hydraulic connections										
Connections (in/out)	°	Type				Grooved joints				
Sizes (in/out)	°	Ø	2″	2″	2″	2″	2″1/2	2″1/2	2″1/2	2″1/2
System side hydraulic connections										
Connections (in/out)	°	Type				Grooved joints				
Sizes (in/out)	°	Ø	2″	2″	2″	2″	2″1/2	2″1/2	2″1/2	2″1/2
Sound data calculated in cooling mode (1)										
Sound power level	°	dB(A)	61,1	61,8	62,9	71,1	67,6	79,1	79,1	79,1
Sound pressure level (10 m)	°	dB(A)	29,6	30,3	31,4	39,6	36,0	47,5	47,5	47,5

(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



WRL 180-400



WRL 500-650

Size			180	200	300	400	500	550	600	650
Dimensions and weights										
A	°	mm	1380	1380	1380	1380	1380	1380	1380	1380
B	°	mm	1320	1320	1320	1320	2060	2060	2060	2060
C	°	mm	845	845	845	845	845	845	845	845
Empty weight	°	kg	370	370	381	388	522	598	708	753

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