

WRL 180/650 REVERSIBLE REFRIGERANT CIRCUIT

Water cooled reversible heat pumps
for the production of hot water up to 55°C
Cooling capacity 44,9÷157,4 kW
Heating capacity 53,0÷183,3 kW

HFC
Refrigerant
R410A



Aermec participates in the EUROVENT Programme: LCP The products of interest can be found on the website www.eurovent-certification.com



PGD1
Simplified remote panel.
ACCESSORY



TAT - TAH
Room sensor
ACCESSORY



- **HIGH EFFICIENCIES**
- **POSSIBILITY OF HAVING:
PARTIAL HEAT RECOVERY
PRODUCTION OF HOT WATER UP TO 55°C**
- **SUITABLE FOR GEOTHERMAL APPLICATIONS**

Characteristics

WRL is the range of water cooled chillers operating with refrigerant R410A. They are internal units with hermetic scroll compressors that respond perfectly to the market requirements: small dimensions, ease of installation, low noise.

High efficiency

Aermec has designed these units to optimise heat pump operation, providing high performances and low energy consumption.

Connections

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.

Silent

The WRL units are distinguished for their silence in operation. Careful soundproofing of the unit with suitable sound-absorbent material results in low sound levels for all units.

Dynamic set point

Using the latest generation of electronic controller and with an external air temperature sensor (accessory), the heat pump unit can vary the leaving water temperature based on climatic conditions, thus increasing the energy efficiency of the system.

Advantages

Using the latest innovative technology and focus on maximum quality gives the WRL series the maximum energy efficiency, ease of installation, and most versatile application using renewable energy sources.

Range

Available in 8 sizes:
• Reversible refrigerant side

Version

WRL H Heat pump reversible refrigerant circuit

Technical features

- Structure and base in hot dip galvanised sheet steel with epoxy paint finish (RAL 9002)
- Generously sized plate heat exchangers
- Compressors with high performance and low electrical input
- Flow switch as standard
- Conforms with Safety Directives (CE) and the standards regarding electromagnetic compatibility
- The safety of the unit is provided by the door interlocked isolator and active protection of the main components
- Externally mounted user interface with display of all operating parameters in 4 languages
- Latest generation of electronic controller
- User-friendly remote mounted control panel with alarm notification.

Accessories

- **AER485P1:** RS-485 interface for supervising 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.
 - **VT:** Anti-vibration mounts: four anti-vibration mounts to be installed under the unit's steel base.
 - **TAT:** Room temperature sensor, 230 Vac recess mounted kit containing the ambient sensor with display and control knob, able to control an ON-OFF valve or a zone pump.
 - **TAH:** Room temperature and humidity sensor, 230 Vac recess mounted kit containing the sensor with display and control knob, able to control an ON-OFF valve or a zone pump and dehumidifier enable.
 - **SSM:** Sensor to be used together with the mixing valve in applications with radiant panels. Accessory to be requested together with the VMFCRP zone accessory.
 - **PGD1:** Simplified remote panel. Allows control of basic unit functions and alarm notification.
- Remote mounted up to 500 m away with TWISTED PAIR SCREENED cable and TCONN6J000.
- **KSAE:** External air sensor. Temperature sensor with plastic enclosure.
 - **VMFCRP:** WRL Zones Control can control up to a maximum of 3 zones with the following modes:
 - **Zone 1: Controlled as standard with the latest generation electronic controller. The "SSM" clamp on sensor (accessory) is recommended to control the flow temperature.**
 - The control of the remaining Zone 2 and Zone 3 is possible using the VMFCRP + SSM accessories for each zone.

Accessories compatibility

WRL H	180	200	300	400	500	550	600	650
AER485P1	•	•	•	•	•	•	•	•
AERNET	•	•	•	•	•	•	•	•
VT	9	9	9	9	15	15	15	15
TAT	•	•	•	•	•	•	•	•
TAH	•	•	•	•	•	•	•	•
SSM	•	•	•	•	•	•	•	•
PGD1	•	•	•	•	•	•	•	•
KSAE	•	•	•	•	•	•	•	•
VMFCRP	•	•	•	•	•	•	•	•

Unit configurator

By suitably combining the numerous options available it is possible to configure each model in such a way as to meet even the most demanding of system requirements.

CODE:

WRL

SIZE:

180 - 200 - 300 - 400 - 500 - 550 - 600 - 650

FIELD OF USE:

X - Electronic expansion valve with leaving liquid down to +4°C
(for different temperature contact us)

Y - Low temperature with leaving liquid down to -8 °C

MODEL:

H - Reversible refrigerant circuit

VERSION:

° - Standard

HEAT RECOVERY

° - Without heat recovery

D - Desuperheater

PUMPS (GEOTHERMAL SIDE)

° - Without pump

B - Low static pressure pump

U - High static pressure pump

F - Low static pressure inverter pump

I - High static pressure inverter pump

V - 2-way modulating valve

PUMPS (SYSTEM SIDE)

° - Without pump

P - Low static pressure pump

N - High static pressure pump

FIELD NOT USED

°

SOFT START

° - Without Soft Start

S - Soft Start

POWER SUPPLY

° - 400V-3N -50 Hz

5 - 500V-3-50Hz (only models WRL400-550-600-650)

Technical Data

WRL - H			180	200	300	400	500	550	600	650
12°C / 7°C	Cooling capacity	(1) kW	44,9	59,6	64,8	79,5	93,0	120,1	140,1	157,4
	Total input power	(1) kW	10,8	14,7	16,3	18,6	20,1	27,6	31,4	35,8
	EER	(1)	4,15	4,06	3,97	4,27	4,63	4,34	4,46	4,39
	Water flow rate system side	(1) l/h	7731	10274	11167	13710	16012	20686	24139	27111
	Pressure drop	(1) kPa	22	37	36	52	25	40	40	38
	Water flow rate source side	(1) l/h	9520	12658	13822	16681	19331	25176	29249	32919
40°C / 45°C	Pressure drop	(1) kPa	31	52	51	74	34	56	57	71
	Heating capacity	(2) kW	53,0	70,9	76,6	92,6	106,4	143,7	164,2	183,3
	Total input power	(2) kW	12,9	17,7	19,1	22,6	24,0	33,1	37,2	42,7
	COP	(2)	4,10	4,00	4,01	4,10	4,44	4,34	4,41	4,30
	Water flow rate system side	(2) l/h	9189	12277	13264	16046	18451	24913	28485	31787
	Pressure drop	(2) kPa	30	52	49	72	32	58	56	70
	Water flow rate source side	(2) l/h	11777	15734	17010	20840	24210	32703	37511	41688
	Pressure drop	(2) kPa	49	89	92	132	61	107	101	126
Performance under average climatic conditions (Average) (55°C) UE n°813/2013 Pdesignh ≤ 400kW										
Pdesignh			68	91	98	119	137	185	212	236
SCOP			4.53	4.45	4.45	4.58	4.93	4.85	4.93	4.80
ηs			173	170	170	175	189	186	189	184
Cooling mode for low temperature										
SEER			161,9	153,5	157,8	167,3	193,4	176,7	183,9	179,5
ηsc			4,25	4,04	4,15	4,38	5,04	4,62	4,80	4,69

WRL-H			180	200	300	400	500	550	600	650
Useful available head system side	P	kPa	139	119	118	95	114	117	105	162
	N	kPa	215	195	194	172	193	224	213	205
Useful available head source side	B-F	kPa	127	98	96	142	172	150	135	106
	U-I	kPa	203	175	227	195	224	193	178	150

Date (14511:2018)

- (1) Water system side (in/out) 12°C/7°C; Water source side (in/out) 30°C/35°C
(2) Water system side (in/out) 40°C/45°C; Water source side (in/out) 10°C/7°C

Model WRL-H			180	200	300	400	500	550	600	650
Electrical data										
Total input current cooling mode	(3)	A	20	25	28	32	36	52	60	69
Total input current heating mode	(3)	A	23	29	31	37	41	56	64	74
Maximum current (FLA)	(3)	A	32,6	41,8	45,2	52,1	59	99	112	125
Starting current (LRA)	(3)	A	119	123	125	167	174	265	310	323
Compressor										
Scroll										
N° circuits/N° compressors			1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Capacity control	%		50/100	50/100	50/100	50/100	50/100	50/100	50/100	50/100
Geothermal side heat exchanger										
Plates										
Hydraulic connections	ø	2"	2"	2"	2"	2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
Quantity	n°	1	1	1	1	1	1	1	1	1
System side heat exchanger										
Plates										
Hydraulic connections	ø	2"	2"	2"	2"	2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
Quantity	n°	1	1	1	1	1	1	1	1	1
Desuperheater (optional)										
Plates										
Hydraulic connections	ø	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
Quantity	n°	1	1	1	1	1	1	1	1	1
Expansion vessel (versions with pumps)										
-										
Expansion vessel (per circuit)	n°/l	1/8	1/8	1/8	1/8	1/8	1/12	1/12	1/12	1/12
Sound data (Cooling mode)										
Sound power		dB(A)	61,1	61,8	62,9	71,1	67,6	79,1	79,1	79,1
Sound pressure		dB(A)	29,1	29,8	30,9	39,1	35,6	47,1	47,1	47,1

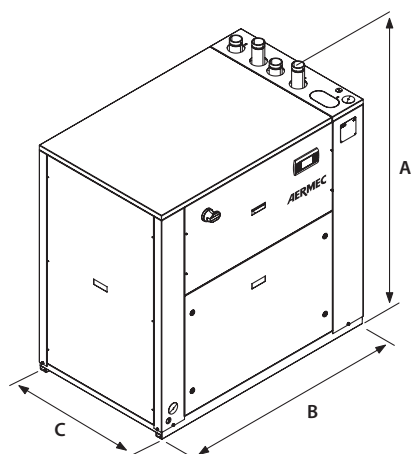
(3) The electrical data of the versions without hydronic module integrated

Sound power Aermec determines sound power values on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification.

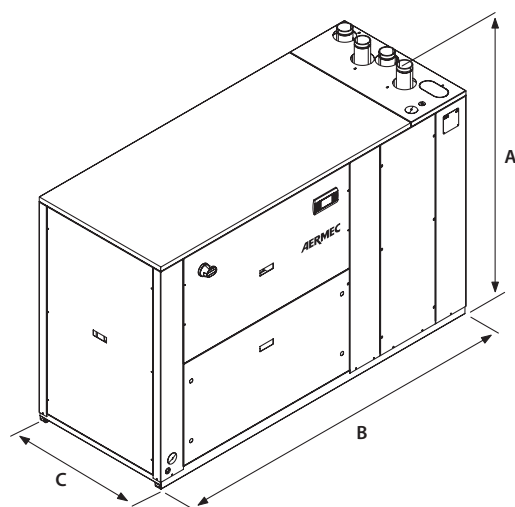
Sound pressure Sound pressure in free field, at 10 m distance from the external surface of the unit (in accordance with UNI EN ISO 3744).

Note: For more information, refer to the selection program or the technical documentation available on the website www.aermec.com

Dimensions (mm)



WRLH 180-400



WRLH 500-650

WRL H Model		180	200	300	400	500	550	600	650
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