

WRA

151 - 1202

UNIT DESCRIPTION

This series of air cooled liquid chillers, equipped with centrifugal fans, are suitable for use in medium sized systems where it is not possible to arrange for the unit itself to be located outdoors. Fan air discharge can be oriented for either horizontal or vertical pattern as requested to better match the needs of the system. Available static pressure can be adjusted to meet the precise requirements of the system. These units may also be used in outdoor sites if such use is specified when ordering, as they are fully equipped for such purposes.

STANDARD UNIT COMPOSITION

- Base frame and external panels made of galvanised polyester sheet.
- Frame of aluminium structural sections.
- Reciprocating semi-hermetic compressors.
- Thermally insulated evaporator, with asymmetric refrigerant paths.
- Condensing coil with copper tubes and aluminium fins, complete with sub-cooling circuit.
- Double suction centrifugal fans.
- Thermostatic expansion valves. Dryer filters. Sight glasses. Solenoid valves on the liquid line.
- Electrical power and control panel complying with EN 60204-1/IEC 204-1 standards.
- Microprocessor control system.
- Freeze-proof oil charge and refrigerant charge.
- Interlock door mains isolator.
- General testing and operational test carried out in the factory in accordance with European Standard EN 12055.

MODELS

- WRA** This range of units features cooling only.
- WRD** This range of units features cooling and partial recovery of the heat rejection.
- WRR** This range of units features cooling and total recovery of the heat rejection.

VERSIONS

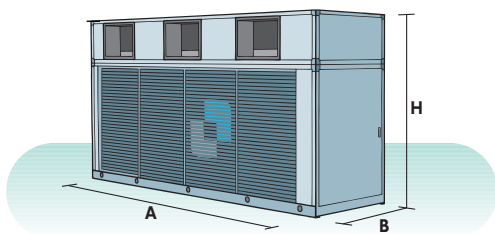
- B** Standard unit.
- HT** Unit for high ambient temperature.
- LN** Low noise units.



GENERAL TECHNICAL DATA

R22

MODELS		151	201	251	301	302	351	401	402	501	502	601	602	702	802	1002	1202
WRA																	
Cooling capacity	① kW	35	45	57	68	72	83	99	95	113	116	131	132	163	187	208	242
Compressor power input	① kW	13	14	18	22	26	29	34	28	38	37	47	45	58	71	83	102
Heating capacity	① kW	48	59	75	90	98	112	133	123	151	153	178	177	221	258	291	344
WRD / WRR																	
Desuperheater heating capacity	② kW	11	13	17	19	23	26	30	25	34	33	42	40	52	63	74	91
Recuperator heating capacity	③ kW	47	60	75	88	96	112	132	120	156	148	181	171	212	253	315	367
FANS RATING																	
Total air flow	m³/s	4	4	7.8	7.8	7.8	11.6	11.6	11.6	11.6	11.6	11.6	11.6	15.5	15.5	17.8	17.8
Max. external static pressure	Pa	90	90	120	90	90	120	90	60	90	60	60	30	30	30	90	90
OPERATING WEIGHT																	
WRA - B	Kg.	634	673	868	891	1086	1120	1152	1281	1321	1379	1371	1441	1743	1807	2110	2326
WRD - B	Kg.	635	674	895	918	1126	1161	1193	1326	1378	1437	1430	1499	1818	1882	2056	2098
WRR - B	Kg.	684	751	972	1000	1228	1254	1286	1480	1473	1591	1550	1662	2001	2065	2244	2336
DIMENSIONS																	
A	④ mm	2100	2100	2900	2900	2900	3700	3700	3700	3700	3700	3700	3700	4500	4500	4500	4500
B	④ mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
H	mm	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2250	2250



① Data referred to:	
Chilled water	12/7 °C
Condensing air	35 °C
② Data referred to:	
Chilled water	12/7 °C
Hot water (desuperheater)	40/45 °C
Condensing air	35 °C
③ Data referred to:	
Chilled water	12/7 °C
Hot water (recovery)	40/45 °C
④ Free areas required:	
Condensing coil side minimum	2000 mm
Electrical panel side	1100 mm
Opposite side to electrical panel	1100 mm
Water connections side minimum	1500 mm

MAIN FUNCTIONS OF THE CVM CONTROLS

	20	300	300	20	
Voltage and frequency supply control	-	•	•	•	Compressor working hours balance system
Missing external consens led signal	•	•	•	•	Part-winding compressor start
Remote on/off by external volt-free contact	Opt.	Opt.	•	•	Pump-down when stopped
Cumulative fault warning alarm	•	•	•	•	Pump-down on starting
Evaporator inlet/outlet water temperature display	•	•	•	•	Led display of interface board correct operation
Recuperator inlet/outlet water temperature display	-	▲	•	•	Auto-diagnostic of the electrical part
Compressor/circuit failure signal	•	•	Par.	-	CVM-Master connection
Unit general-alarm signal	•	•	Par.	-	CVM-Interface connection
Print-out of the temperature and pressure values (if any)	•	•	Opt.	-	Landis Staefa communication gateway
Configuration parameters print-out	•	•	Par.	-	Johnson Controls communication gateway
Historical alarms and events memory and print-out	25	200	•	-	Communication protocol
Propor. regulating algorithm on the inlet water temp.	•	•			
Proportional + Integral regulating algorithm	Par.	Par.			
Compressors start sequence at unit start-up	-	Par.			
Delayed compressor start	•	•			
Compressor start per hour and restarting time control	•	•			
Compressor working-hours control and display	•	•			

WRA-WRD with CVM 20 WRR with CVM 300

•: standard;
-: not available;
▲: only for WRR
Opt.: available upon request;
Par.: available modifying a value of the configuration parameters