

FE/WRAT

1402 - 6408

UNIT DESCRIPTION

This series of air cooled water chillers, equipped with axial fans, uses multiple compressors capable of meeting the needs of large scale systems. They are units whose characteristics make them suitable for outdoor installation. For these units, an innovative building know-how has been applied, with modular elements, to obtain a large range of products and to cover a large cooling capacity range. The compressors are housed in a special acoustically insulated protection case. Insulation of the externally located evaporator incorporates a surface treatment that provides protection against the elements.

STANDARD UNIT COMPOSITION

- Base and supporting structure and panels are made of galvanized epoxy powder coated steel with high thickness.
- Reciprocating semi-hermetic compressors, placed on a floating base, are protected by an enclosure for an adequate acoustic insulation.
- Axial fans with IP54 protection grade.
- Silencers on the compressor discharge lines.
- Thermally insulated evaporator, with asymmetric refrigerant paths.
- Thermostatic heating element for evaporator anti-frost protection.
- Condensing coil with copper tubes and aluminium fins, complete with sub-cooling circuit.
- 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

- FE/WRAT** This range of units features cooling only.
- FE/WRAD** This range of units features cooling and partial recovery of the heat rejection.
- FE/WRAR** This range of units features cooling and total recovery of the heat rejection.

VERSIONS

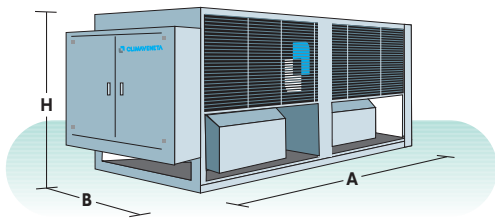
- B** Standard unit.
- HT** Unit for high ambient temperature.
- LN** Units with reduced sound level emission.
- SL** Low noise units.



GENERAL TECHNICAL DATA



MODELS		1402	1602	1804	2004	2204	2404	2804	3004	3204	3406	3606	4206	4406	4606	4806	5608	6008	6408
FE/WRAT																			
Cooling capacity	① kW	300	347	420	455	508	547	591	642	687	775	811	862	934	981	1026	1183	1285	1376
Compressor power input	① kW	101	121	154	167	182	196	199	218	238	278	293	293	317	337	357	399	436	476
FE/WRAD - FE/WRAR																			
Desuperheater heating capacity	② kW	90	108	138	149	163	175	178	195	212	248	261	262	283	300	318	356	389	425
Recuperator heating capacity	③ kW	416	484	581	629	696	748	813	879	945	1059	1110	1184	1283	1348	1413	1628	1761	1891
FE/WRAT - SL																			
Cooling capacity	① kW	300	342	427	463	503	541	596	635	681	766	801	869	937	972	1017	1194	1271	1363
Power input	① kW	101	122	151	164	184	199	198	220	240	282	297	292	317	339	359	396	440	479
OPERATING WEIGHT																			
FE/WRAT - B	Kg.	3140	3250	4750	4900	4900	5280	5820	6070	6220	7400	7440	8300	8620	8770	8920	11380	11640	11880
FE/WRAD - B	Kg.	3280	3390	4910	5060	5070	5460	6000	6260	6420	7660	7710	8570	8900	9060	9320	11740	12020	12280
FE/WRAR - B	Kg.	3380	3530	5110	5340	5360	5760	6300	6550	6700	8100	8160	9020	9340	9490	9640	12340	12600	12840
DIMENSIONS																			
A	④ mm	3100	3100	5800	5800	5800	5800	5800	5800	5800	8500	8500	8500	8500	8500	8500	11200	11200	11200
B	④ mm	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	mm	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350



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	1800 mm	
Electrical panel side	1800 mm	
Opposite side to electrical panel	1500 mm	

MAIN FUNCTIONS OF THE CVM CONTROLS

	300	3000	3000	300	
Voltage and frequency supply control	•	•	•	•	Compressor working-hours control and display
Missing external consens led signal	•	•	•	•	Compressor working hours balance system
Remote on/off by external volt-free contact	Opt.	•	•	•	Part-winding compressor start
Cumulative fault warning alarm	•	•	•	•	Pump-down when stopped
Evaporator inlet/outlet water temperature display	•	•	•	•	Pump-down on starting
Recuperator inlet/outlet water temperature display	▲	▲	•	•	Fan speed control
Compressor/circuit failure signal	•	•	•	•	Led display of interface board correct operation
Unit general-alarm signal	•	•	•	•	Auto-diagnostic of the electrical part
Print-out of the temperature and pressure values (if any)	•	•	Par.	Par.	CVM-Master connection
Configuration parameters print-out	•	•	Par.	Par.	CVM-Interface connection
Historical alarms and events memory and print-out	200	200	Par.	-	Supervising software connection
Propor. regulating algorithm on the inlet water temp.	•	•	Opt.	Opt.	Landis Staefa communication gateway
Proportional+Integral regulating algorithm	Par.	Par.	Par.	Par.	Johnson Controls communication gateway
Compressors start sequence at unit start-up	Par.	Par.	•	•	Communication protocol
Real-time internal clock	-	•			
Programmable timer function	-	Par.			
Double-set mode connected to programmable timer	-	Par.			
Delayed compressor start	•	•			
Compressor start per hour and restarting time control	•	•			

FE/WRAT-D-R 1402 - 1602 with CVM 300
FE/WRAT-D-R 1804 - 6408 with CVM 3000

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

