cosmotec

your cooling solutions



WLA Compact

- F-GAS Compliant
- Refrigerant R1234yf

Reliability and Precision at the Highest Levels



Reliable and Precise Industrial Liquid Chiller

The performance of modern industrial processes is heavily influenced by variations in operating temperature and can be compromised by dangerous overheating phenomena.

The new **WLA Compact** industrial chillers are designed to provide precise temperature control of process fluids and reliable operation across a wide range of industrial applications, including the cooling of machine tools, lasers, presses, extruders, and sectors such as chemical-pharmaceutical, food, and medical.

The use of R1234yf refrigerant gas improves efficiency and reduces the amount of refrigerant required, thereby significantly limiting resource consumption and CO_2 impact, making WLA Compact chillers "Green" and F-Gas compliant.

Advantages of R1234yf gas:

- **Low environmental impact**: GWP value of 0.5, very low and well below the limit set by EU regulations (GWP < 150)
- **Energy efficiency and performance**: better performance compared to traditional refrigerants, ensuring high thermodynamic performance and lower energy consumption
- **Certified safety**: classified as mildly flammable (A2L) and safer than A3 refrigerants (e.g. propane)

EASE OF INSTALLATION AND MAINTENANCE

Removable panels on all sides of the unit ensure easy access to the hydraulic and refrigeration circuit components, facilitating maintenance. Indicators for hydraulic circuit operation (tank level and pressure gauge) and the front panel's loading and drainage connections simplify maintenance operations and allow for the installation of multiple units side-by-side or under a workbench.

RELIABLE OPERATION

Each **WLA Compact** unit is individually tested at a specialized end-of-line test station, where the refrigeration circuit parameters and safety devices' operation are verified. The simplified refrigeration circuit and standard safety systems such as the flow switch and hydraulic bypass valve increase the unit's reliability and ensure a long operational life.

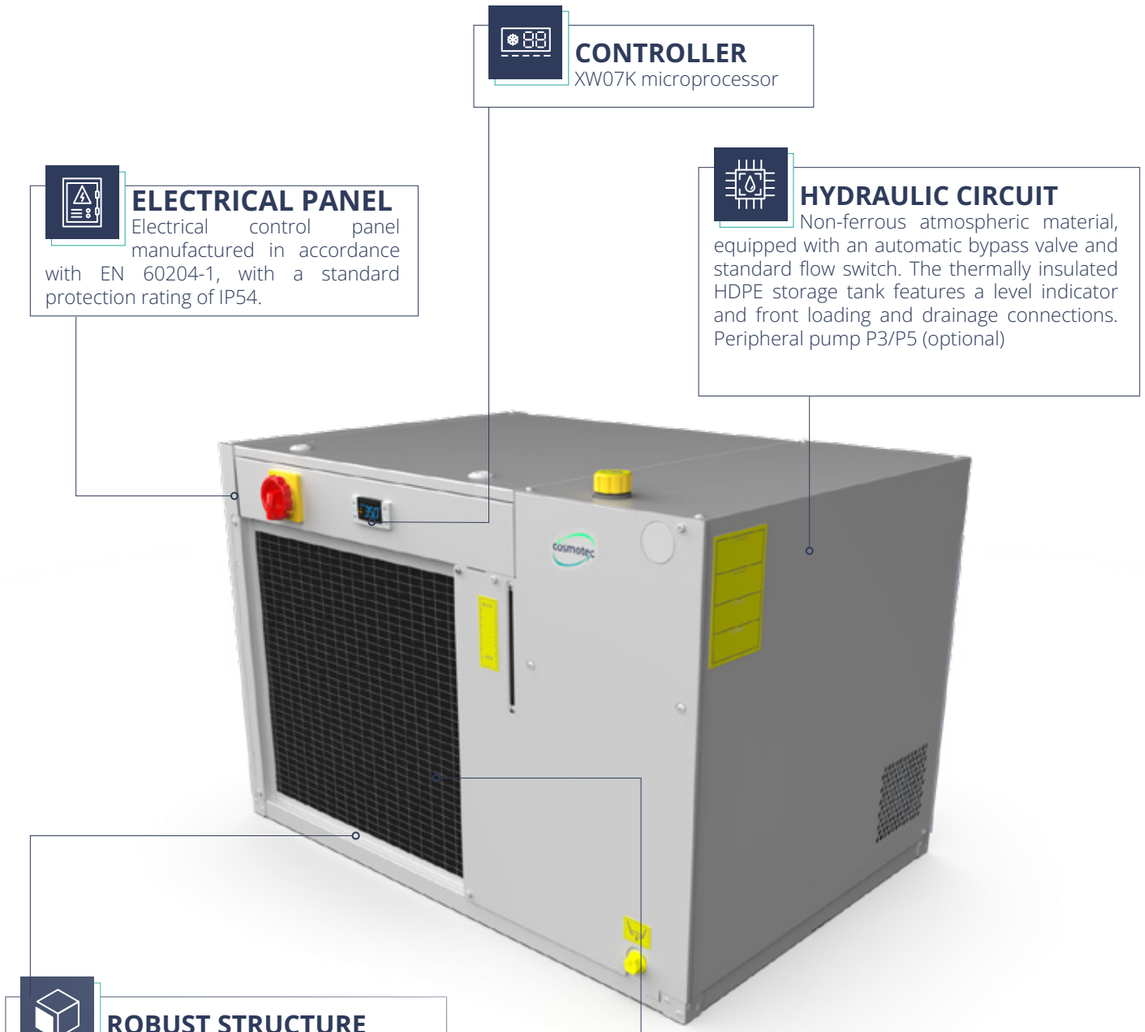
MICROPROCESSOR CONTROL XW07K

The LT version for low ambient temperatures -5°C/-10°C, the Brine version for low water outlet temperatures Tw-5°C (SPECIAL), and the LASER version expand the technical capabilities of the **WLA Compact** range, meeting diverse application requirements and ensuring maximum safety for the production process in which the chiller is integrated.

HIGH CONFIGURABILITY

The LT version for low ambient temperatures -10°C, the Brine version for low water outlet temperatures Tw-5°C (WLA 10-13), and the LASER version expand the technical capabilities of the **WLA Compact** range, meeting diverse application requirements and ensuring maximum safety for the production process in which the chiller is integrated.

Key Strengths



CONTROLLER
XW07K microprocessor

ELECTRICAL PANEL
Electrical control panel manufactured in accordance with EN 60204-1, with a standard protection rating of IP54.

HYDRAULIC CIRCUIT
Non-ferrous atmospheric material, equipped with an automatic bypass valve and standard flow switch. The thermally insulated HDPE storage tank features a level indicator and front loading and drainage connections. Peripheral pump P3/P5 (optional)

ROBUST STRUCTURE
Self-supporting type with galvanized steel framework, powder-coated in RAL 705. All panels are easily removable, allowing easy access to the components and facilitating and speeding up maintenance operations.

REFRIGERATION CIRCUIT
Manufactured according to directive 2014/68/EU, comprising:
- Rotary/scroll compressor
- High-efficiency plate evaporator
- Finned coil condenser
- Thermostatic valve
- Refrigerant R1234yf

WLA Compact Certification 4.0
Enabling access to Industry 4.0 tax incentives

For more information, visit our page
www.cosmotec.it/certificazione-industria-4-0

Advanced Technologies for Industrial Process Cooling

Designed for 24/7 industrial use
all units are individually tested in the factory and subjected to functional checks. The use of top-brand components and a full range of safety devices (automatic hydraulic bypass valve, phase monitor, antifreeze sensor, differential pressure switch) ensure long-term reliability.

Corrosion Protection
The plastic HDPE tank, non-ferrous hydraulic circuit, and pump (stainless steel/polymers) are corrosion-free, preserving the purity of the process fluid.

LT Version for Low Ambient Temperature
Suitable for ambient temperatures down to -10°C, includes enhanced insulation of the hydraulic circuit and a fan speed control system for the condensing section.

LASERPACK Version
All WLA Laser units are equipped with a LASERPACK regulation system, which integrates a hot gas bypass valve for cooling power regulation and a microprocessor control with an advanced PI algorithm ensuring a standard hysteresis of ± 1K under variable load conditions.

Dynamic Set Point Function
Thanks to a temperature sensor mounted on the side panel, the controller adjusts the working set point based on the external temperature. This prevents deviations and deformations in spindle cooling or avoids condensation in electrical device cooling.



Technical Features

Refrigeration circuit

- Plate heat exchangers optimized for operation at high evaporation temperatures
- New finned coil condensers protected by a metal anti-particulate filter, with
- reduced tube diameter: reduce refrigerant charge by approx. 20%
- High-pressure (HP) pressure switch with manual reset

Thermostatic expansion valve

Hydraulic circuit – atmospheric, non-ferrous

- Atmospheric-pressure hydraulic circuit made of non-ferrous materials
  HDPE buffer tank with increased capacity, equipped with visual level indicator, filling/drain connections, and overflow
- Standard automatic bronze bypass valve
- Standard flow switch
- Pressure gauge 0–6 barg

Microprocessor control

- XW07K manages and optimizes operation of the refrigeration and hydronic circuits. It controls compressor ON/OFF cycles based on the required water temperature, respecting minimum operating times
- Measurement and display of outlet water temperature (Tw out) and ambient temperature
- Antifreeze function for evaporator protection
- Alarm management: HP
- General alarm dry contact
- Remote ON/OFF digital input
- Fine temperature control function (hysteresis ± 1K)
- Dynamic set point function

Versions & Options

- Version for low outlet water temperature -5°C (WLA 10/13)
- Version for low ambient temperature -10°C
- LASER version with hot gas injection valve (hysteresis ±1K)
- P5 high-head option
- Level switch option
- Flooded installation option
- Preheating heater optionAmbient probe option for dynamic set point
- Aluminum air filter

Accessories – Kits

- 100 µm cartridge water filter
- Swivel wheels
- Lifting eyebolts
- RS485 ModBus connection
- External flow switch
- Manual filling kit

Data Sheet

		WLA02	WLA03	WLA05	WLA08	WLA10	WLA13
Cooling capacity	kW	1,41,6	1,6/1,8	2,5/2,8	3,2/3,6	4,1/4,6	5,1/5,7
Outlet water temperature	°C	+13/+30					
Ambient air temperature	°C	-5/+45					
Power supply (V/ph/Hz)	230-1-50/60	·	·	·	·		
	230-1-50					·	·
	400-3-500 460-3-60			·	·	·	·
Tank volume	l	9	9	27	27	27	27
Width	mm	641	641	874	874	874	874
Depth	mm	513	513	672	672	672	672
Height	mm	513	513	613	613	613	613



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