cosmotec

your cooling solutions



ErP2021

WLA Precision R32

Liquid chiller
Compact, reliable, and versatile

The **new range of WLA Precision industrial liquid chillers for outdoor applications** is designed to ensure the high reliability standards required by **24/7** manufacturing processes and perfectly meets the needs of applications demanding **high quality and reliability standards.**

Thanks to careful design and dedicated technological solutions such as high-efficiency evaporators and condensers, the standard electronic expansion valve, and the new high-efficiency axial fans, the WLA Precision ErP range stands out for its **high performance**, surpassing *minimum energy efficiency requirements set by the European ErP Ecodesign directive*.



High performance in compliance with *Ecodesign* regulations

Energy efficency

The thermodynamic optimization and increased exchange surface areas of the evaporator and condenser allow WLA Precision units **to achieve energy efficiency levels at the top of the category**. All WLA Precision units comply with the limits required by the ErP 2021 regulation - SEPR HT (EU) 2016/2281 - SEPR MT (EU) 2015/1095.

Extended operating limits

Thanks to dedicated versions and accessories, full-load operation is guaranteed up to **+45°C external air temperature and -10°C** (-20°C in LT version). WLA Precision units produce chilled water with a maximum evaporator outlet temperature of up to +25°C; standard minimum temperature +5°C and -10°C in the BRINE version.

New SEC.blue electronic control

The programmable microprocessor control SECBlue, with its new and advanced proprietary logic, **ensures and optimizes the operation of all WLA Precision units in the various available configurations**. SEC.Blue features a graphic display with 6 languages and allows both remote control of the unit and its integration into RS485 ModBus and Ethernet BMS supervision systems.

New configurations

The new LT versions for low ambient temperature -20°C, the Brine version for low water outlet temperature Tw-10°C, and the new version for pressurized hydraulic circuits expand the technical equipment of the WLA Precision range, **making it capable of meeting various application needs**, ensuring the maximum safety of the integrated cooling process.

Electrical panel

The electrical panel is designed according to **EN60204-1** and includes: the main switch with door lock, numbered electrical cables, automatic switches, and standard phase monitor. The standard IP54 protection level allows external installation. The active ventilation system is standard and includes a heating resistor and ventilation grilles.

Refrigeration circuit

The refrigeration circuit is equipped with **two hermetic scroll compressors installed in parallel and optimized for operation with the R32 refrigerant**. The standard electronic expansion valve EEV with sensors placed on the refrigeration circuit allows optimizing the operation of the refrigeration circuit under any thermal load condition, ensuring **maximum efficiency** at all times.

Condenser

Fin-tube heat exchanger with copper tubes and corrugated aluminum fins installed with a longitudinal "V" geometry, with an angle specially designed and selected to maximize the efficiency of the air-refrigerant gas heat exchange. The technical solution with mini-tubes maximizes the surface area affected by the air, allowing **compact dimensions and a reduction in the refrigerant charge**.

AC-EC Fans

Standard AC axial fans equipped with an asynchronous motor with IP54 external rotor protection and electronic speed control as standard. The blades are made of corrosion-resistant PP technopolymer and protected by a safety grille.
EC axial fans (standard for LASER and LT versions) with high efficiency, equipped with a brushless electronically commutated motor with integrated temperature control and continuous speed regulation from 10% to 100%.

SEC.blue Control

Programmable microprocessor control. IP54 UV-resistant graphical display with menus in 6 languages: Italian, English, German, French, Russian, Spanish.

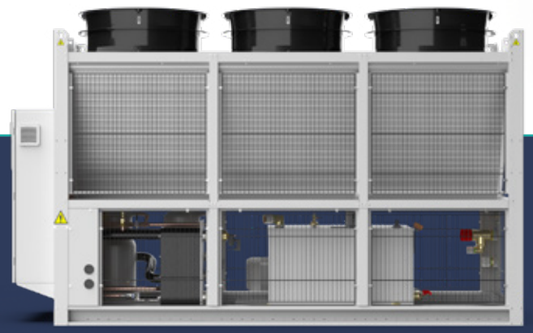
Centrifugal Pumps

High-pressure horizontal multistage INOX centrifugal pumps, **specifically designed for process cooling**. Available head pressure:: P2 - 2barg P3 - 3barg; P5 – 4.5/5barg; double standby pump P3+P3. INOX P5 INVERTER pump with MGE motor equipped with permanent magnets and high-efficiency frequency converter.

Structure

Robust structure designed and made to ensure total resistance to atmospheric agents and corrosion. Base, uprights, and panels in galvanized carbon steel, assembled with stainless steel/galvanized metal hardware and painted with RAL 7035 polyester powder with a brushed finish.





STANDARD VERSION

NON FERROUS

Includes a plate type evaporator in AISI316 protected from freezing by differential pressure switch and an antifreeze probe. The hydronic module is suitable for atmospheric hydraulic circuits and includes an AISI304 tank with a level sensor, an adjustable automatic hydraulic bypass valve, and a circuit composed of non-ferrous materials such as stainless steel, polymers, brass. This configuration preserves the process fluid from any contamination and is particularly suitable for process cooling in laser, food & beverage, chemical/pharmaceutical sectors.



PROCESS VERSION

SHELL AND TUBE EVAPORATOR

Includes a single-circuit direct expansion evaporator with a carbon steel shell and copper tubes installed inside a carbon steel hydraulic tank. The heat exchanger is protected from freezing by a differential pressure switch and an antifreeze probe. The hydronic module is suitable for pressurized hydraulic circuits and includes: a vacuum breaker switch, an automatic air vent valve, two membrane expansion vessels, and an adjustable automatic hydraulic bypass valve to protect the pump.

Technical Features

Refrigeration Circuit

- Compliance with ErP 2021- SEPR HT (EU) 2016/2281- SEPR MT (EU) 2015/1095 regulations;
- Hermetic scroll compressors protected by a phase sequence control relay and equipped with an oil crankcase heater;
- Refrigerant: R32;
- Plate type evaporators in AISI 316 stainless steel, compact and highly efficient;
- Fin-tube condensers (copper tubes / aluminum fins) with mini-tube technology;
- HP/LP pressure switches;
- High-pressure transducer;
- Electronic Expansion Valve EEV;
- Axial fans with PP technopolymer corrosion-resistant blades and electronic speed regulation by phase-cutting;
- High and low-pressure safety valves;

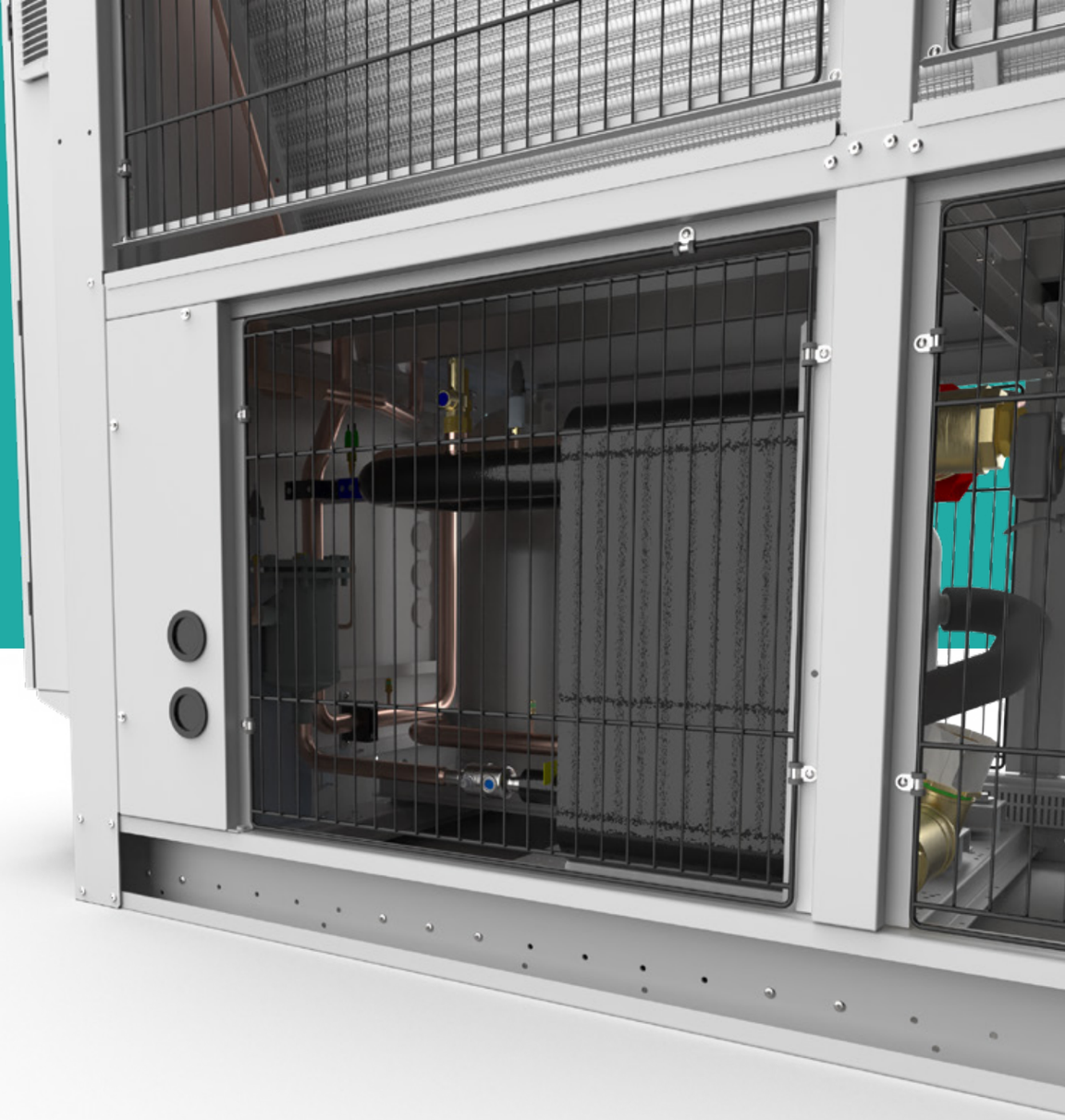
Hydraulic Circuit

- AISI304 inertial tank dustproof with visual level indicator, connections for loading/discharging, overflow, and level switch;
- Automatic hydraulic bypass valve in brass standard;
- Standard adjustable automatic brass hydraulic bypass valve:
- Evaporator antifreeze protection: standard differential pressure switch and antifreeze probe;
- Pressure gauge 0-6 barg;

Electrical Panel

- Design and construction in compliance with EN 60204 regulations;
- Main switch with door lock;
- Automatic switches and contactors;
- IP54 protection level: suitable for outdoor installation;
- Phase monitor standard;
- Clean contacts: ON/OFF remote; general alarm;
- Labeled electrical cables;
- Standard active ventilation system: includes a heating resistor and ventilation grilles.





Electronic Expansion Valve (EEV)

Electronic expansion valves **allow for optimizing the operation of the refrigeration circuit** under any thermal load condition. Thanks to precise control of subcooling and superheating, it is possible to extend the operating range of the chiller, preserving the reliability of the compressor.

Simple Maintenance

The protective grid of the hydraulic and refrigeration circuits compartments (option) are removable allowing easy access to internal components for maintenance operations. The electrical panel is compartmentalised into two sections accessible through different doors: a power section and a low-voltage section (signals and control).

Maximum Level of Reliability

WLA Precision units are **designed for 24/7 industrial use**: all units are individually tested in the factory and subjected to functional checks. **The complete standard safety equipment ensures stable operation in all conditions** and includes: control pressure switches, phase monitor, antifreeze sensor, level sensor, housing heater, and a hydraulic bypass circuit with an automatic valve.

Hydraulic Circuit NON FERROUS

The standard hydraulic circuit includes a plate type evaporator in AISI316, a thermal buffer tank in AISI304, and the hydraulic circuit composed of non-ferrous materials such as stainless steel, polymers, and brass. **This particular technical solution, resistant to corrosion, allows WLA Precision units to preserve the process fluid from any contamination** and is particularly suitable for cooling in the LASER, FOOD & BEVERAGE, CHEMICAL/PHARMACEUTICAL sectors.

Designed for process applications

Plastics and Rubber molding, extrusion, blow molding, thermoforming cooling

Laser cooling laser sources and optics for welding, cutting, marking, medical lasers, 3D printers

Food & Beverage meat processing, pasta/bread production, chocolate industry, dairy production, coffee production, mineral water and soft drink carbonation, fruit juice production, beer.

Winemaking temperature control for fermentation processes, clarification, tartaric stabilization

Medical Sector MRI, X-ray equipment, CT scans

Printing flexographic lines, digital printers, offset, UV plants

Chemical and Pharmaceutical cooling reactors, tanks, cosmetic industry, clean rooms, paint production, electroplating

Biogas biogas drying systems for feeding cogenerators or biogas production

Rental customized solutions for cooling critical processes during the summer months to increase production, or in the case of unexpected failures.

Adaptable to every need

The wide range of configurations and numerous options and accessories available make ***WLA Precision*** **suitable for all process cooling applications**.

Options

- EC Brushless Fans: Permanent magnet motor
- Stainless Steel Centrifugal Pumps: P3; P5; dual standby pump P3+P3;
- P5 pump with permanent magnet MGE motor and frequency converter;
- Stainless Steel Centrifugal Pumps P3/P5 BRINE: with increased power motor;
- Electronic flow switch;
- Automatic loading for atmospheric or pressurized hydraulic circuits;
- Under user level installation: non-return valve + solenoid valve;
- Aluminum air condenser filters;
- Protective grilles for condenser coils;
- Anticorrosive treatment for condenser coils;
- Grille for refrigerator and hydraulic compartment
- Preheating/antifreeze electric resistors;

Accessories - KIT

- External electronic flow switch kit;
- Aluminum air condenser filter kit;
- External cartridge water filter kit (500 µm);
- External cartridge water filter kit (80 µm) - LASER version;
- Spring anti-vibration kit;
- Seismic anti-vibration kit;
- Adjustable feet kit;
- Remote control kit;
- Remote ambient probe kit (10m cable);
- Manual Filling Kit for Pressurized Version.



Standard solutions tailorable to meet every need

Brine -10° Version

The BRINE version **is suitable for glycol water production at low temperatures down to -10°C**. It includes: insulation of the hydraulic circuit; pumps with oversized motors suitable for operation with high glycol concentrations.

LASER Version

The performance of modern industrial lasers is closely influenced by variations in their operating temperature and can be compromised by dangerous overheating phenomena. **WLA Precision LASER units mod. 5A-7B are equipped with a LASERPACK regulation system**, which integrates a hot gas bypass valve for refrigeration power control, EC brushless fans, and a microprocessor control with an advanced PI algorithm to guarantee a standard hysteresis of ±0.5K under variable load conditions.

LT -20° enviroment Version

The LT version **is suitable for low-temperature environments down to -20°C**. It is characterized by: dedicated control software; electronic control of the speed of EC brushless fans; thermal insulation of the hydraulic circuit. BRINE centrifugal pumps feature an oversized motor suitable for high glycol concentrations.

PROCESS Version

The PROCESS version **includes a tube bundle evaporator immersed in a hydraulic tank**. The construction features of this technical solution allow WLA Precision to operate reliably in demanding industrial applications, even with process fluids containing impurities. The extractability of the bundle also allows cleaning operations in the case of particularly hard water (limestone).

Microprocessor Control SEC.blue

The programmable microprocessor control SEC.blue **allows optimizing the operation of refrigeration and hydronic circuits and facilitates easy connection of WLA Precision units to all BMS management systems**. The proprietary operating system is generally very flexible and, upon request, can be expanded with numerous additional parameters and functions.

Main features

- IP54 UV-resistant graphic display with menus in 6 languages: Italian, English, German, French, Russian, Spanish;
- ON/OFF adjustment of compressors based on the set point temperature;
- Fan speed control;
- Measurement and display of inlet/outlet temperatures of the process fluid and ambient temperature;
- Control of preheating/antifreeze resistance (water side);
- Display of alarm history;
- Management of electronic expansion valve;
- Alarm management: HP; LP; antifreeze; tank level;
- Clean general alarm contact;
- Remote ON/OFF digital input;
- No. 5 On-Off outputs (clean contacts) for alarms and pre-alarms adjustable via software;



Sequencing

SEC.blue comes standard with the Sequencing function. This function allows **connecting up to 10 chillers through a dedicated line**, divided into 5 work zones, and managing their components as a single unit, with the aim of improving the efficiency of the entire system.

Dynamic Set Point Function

The unit's operation adapts automatically to various usage situations. The dynamic set point function adjusts the fluid temperature based on the ambient temperature. It is also possible to modify the chiller set point using an integrated 4-20mA analog input.

Emergency cooling

In case the active chiller in a specific work zone is unable to meet the thermal load required by the user, **the Emergency Cooling function sequentially activates the other chillers on the same line**. In case of a chiller failure, the alternate activation function of the chillers is available, ensuring continuous operation.

Integration with Supervision Systems

The electronic board includes as standard:

- Ethernet port, on RJ45 connector, for communication with HTTP, SNMP, ModBus TCP protocols, and remote software updates
- RS485 port, for communication via ModBus RTU protocol
- Monitoring through integrated web page, with email alarm functions

Technical data

			WLA8A	WLA0B	WLA4B	WLA7B	WLA0C	WLA5C	WLA0D	WLA5D
Cooling capacity	W20-15 L32	kW	60,00	74,00	83,00	99,00	115,00	127,00	143,00	158,00
Power input		kW	14,48	16,89	18,86	23,24	28,61	27,60	32,41	38,15
EER W20-15 L32			4,14	4,38	4,40	4,26	4,02	4,60	4,41	4,14
Cooling capacity	W12-7 L32	kW	45,89	57,07	63,98	76,66	90,38	98,76	111,64	124,19
Power input		kW	14,68	17,93	19,98	24,23	29,31	29,19	33,78	39,24
EER W12-7 L32			3,13	3,18	3,20	3,16	3,08	3,38	3,30	3,16
SEPR HT Regulation 2016/2281			5,36	5,05	5,24	5,45	5,33	5,42	5,40	5,38
Power supply			400-300-50							
Sound pressure*		dBA	47,0	54,7	52,3	52,9	53,4	54,6	55,0	55,8
Tank volume	STANDARD	dm3	300							
	PROCESS	dm3	250					480		
Height [mm]		mm	2048	2178	2178	2178	2178	2178	2178	2178
Width [mm]		mm	1135	1135	1135	1135	1135	1135	1135	1135
Depth [mm]		mm	2563	2563	2563	2563	2563	3563	3563	3563
Operating weight**		kg	760	800	840	850	860	1100	1140	1149
Empty weight**		kg	1060	1100	1140	1150	1160	1400	1440	1449
Operating weight***		kg	1180	1240	1290	1320	1320	1690	1690	1690
Empty weight***		kg	1480	1540	1590	1620	1620	2240	2240	2240

* At 10 m: average value measured in free field over a reflective plane at a distance of 10 m from the unit, according to EN ISO 9614-2. Values with a tolerance of ±2 dB
** STANDARD configuration — atmospheric evaporator plates + tank + P3 pump, without options/accessories. Tolerance ±10%
*** PROCESS configuration — shell-and-tube evaporator + tank + P3 pump, without options/accessories. Tolerance ±10%



COSMOTEC

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