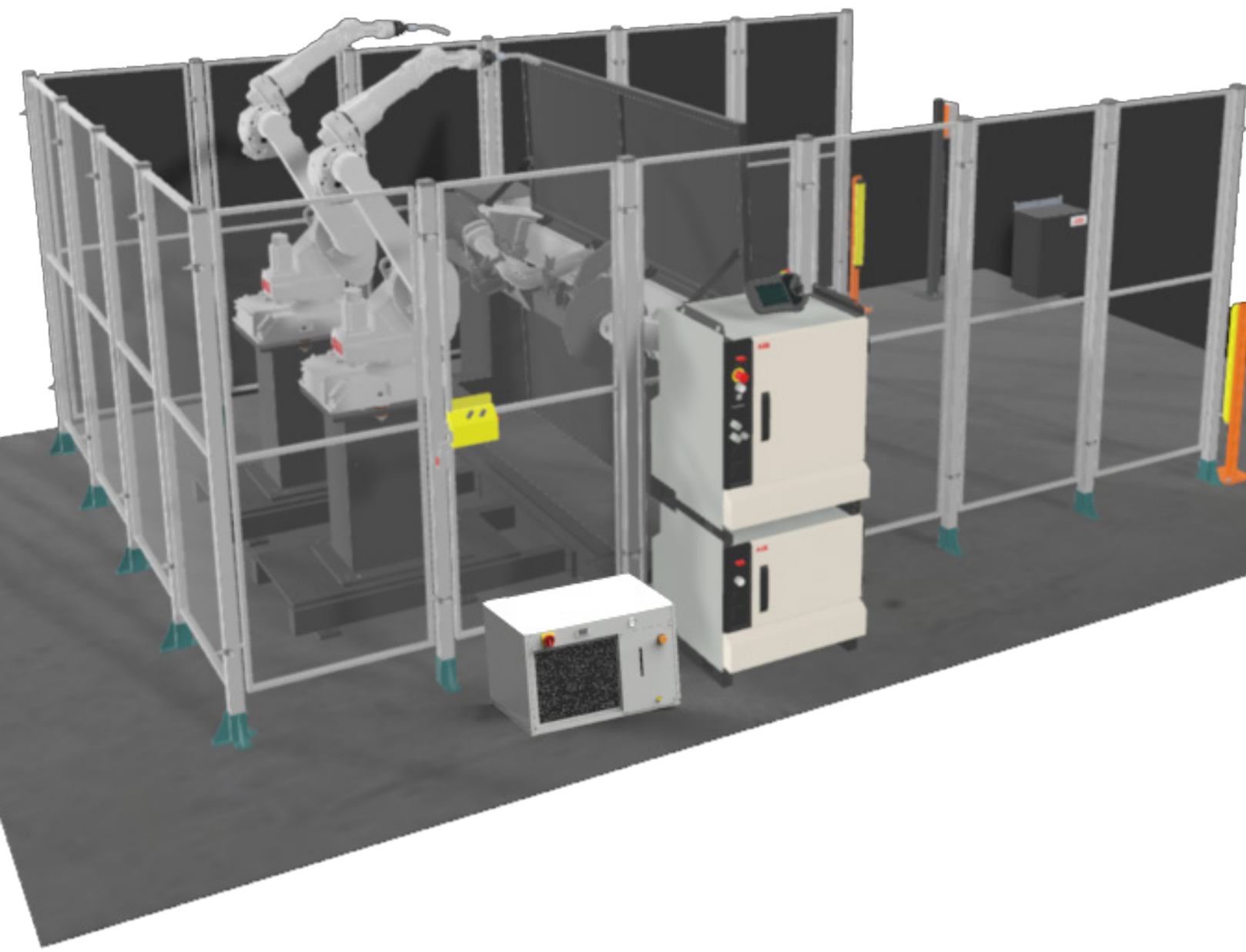
WLA Compact

Industrial Liquid Chiller - Compact, Reliable, Versatile



COSMOTEC
INDUSTRIAL COOLING

Industrial chiller - Reliable and Precise

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

The new **WLAcompact** have been designed to provide **accurate temperature control of the process fluid** and **reliable operation** in a wide variety of industrial applications such as: machine tools, lasers, presses, extruders, and for chemical-pharmaceutical, food and medical sectors.

"Reliability and precision at the highest level"

Easy Installation and Maintenance

Removable panels on all sides of the unit provide easy access to the hydraulic and refrigeration circuit components and facilitate maintenance. Hydraulic circuit indicators (tank level and pressure gauge) and hydraulic fill and drain connections on the front panel simplify maintenance and allow several units to be installed side-by-side or under a work bench.

Reliable operation

All WLA Compact units are individually tested by means of a special test station at the end of the line, where the operating parameters of the cooling circuit and the functioning of the safety devices are verified. The simplified refrigeration circuit and the presence of safety systems such as the flow switch and the hydraulic bypass valve as standard increase the reliability of the unit and guarantee a long working life.

XW07K Microprocessor Control

The XW07K microprocessor control guarantees and optimises the operation of all WLA Compact units in the various configurations available. The controller allows both the remote control of the unit and its integration in BMS RS485 ModBus supervision systems by means of special accessories.

High degree of Configurability

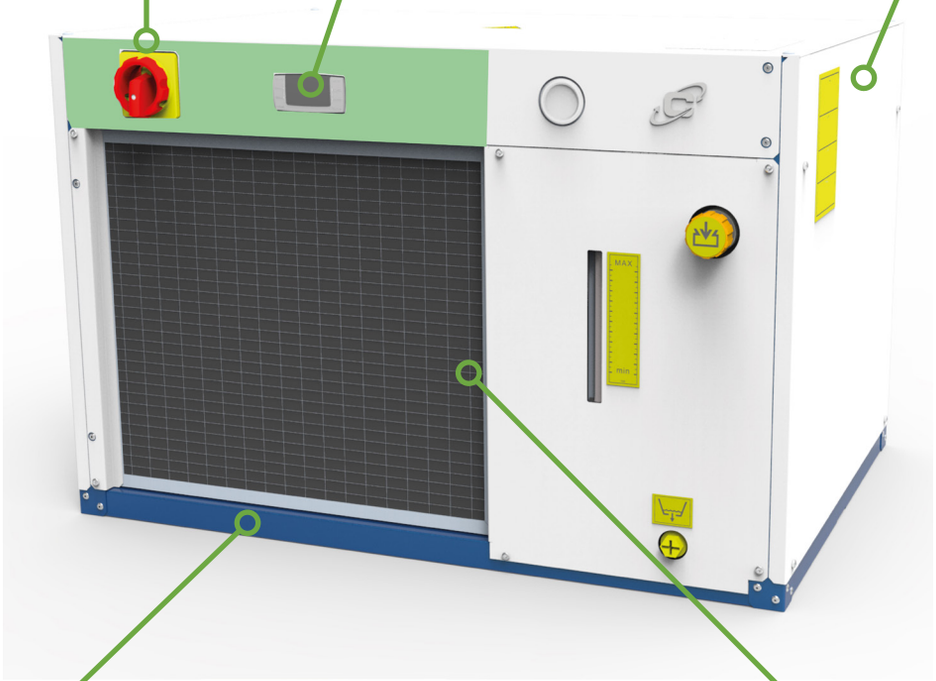
The LT version for low ambient temperature -5°C/-10, the Brine version for low water outlet temperature Tw-5°C (SPECIAL), and the LASER version expand the technical equipment of the WLA Compact range, which is able to satisfy the most varied application requirements, guaranteeing maximum safety of the production process in which the chiller is integrated.

Highlights

ELECTRICAL PANEL
manufactured according to EN60204-1, includes: the main disconnect switch, numbered electrical cables and standard phase monitor. Standard bifrequency 50/60HZ power supply

Microprecessor Control XW07K

HYDRAULIC CIRCUIT
atmospheric, made of non-ferrous material and equipped with automatic bypass valve. The HDPE storage tank is thermally insulated and fitted with level indicator and front loading and drainage connections. Peripheral pump P3/P5 (optional)



ROBUST STRUCTURE
self supporting, with galvanized steel panelling and RAL705 powder coated. All panels are easily removable and allow easy access to internal components for maintenance operations

REFRIGERATION CIRCUIT
made according to directive 2014/68/EU composed of :
-rotary or scroll compressor
-high efficiency plate evaporator
-finned coil condenser
-thermostatic valve

Refrigerant fluid R134a

Advanced Technologies for Industrial Process Cooling

Designed for 24/7 industrial use:
all units are individually tested at the factory and functionally checked. The use of top brand components and the complete set of safety devices (automatic hydraulic bypass valve, phase monitor, antifreeze sensor, differential pressure switch) guarantee long-term reliability.

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

LT version for low ambient temperature:
suitable for ambient temperatures down to -5 °C/-10 °C includes increased insulation of the hydraulic circuit and a system to regulate the speed of the fans in the condensing section.

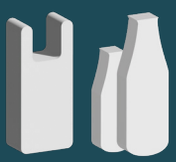
LASERPACK Version:
All WLA Laser units are equipped with a LASERPACK regulation system, which integrates a hot gas bypass valve to regulate the cooling capacity and a microprocessor control with an advanced PI algorithm to guarantee a standard hysteresis of ±0.5K/1K under variable load conditions.

Dynamic set point function:
Thanks to a temperature sensor fixed on the side panel of the unit, the controller adjusts the working set point to the outside temperature. This makes it possible, for example, to avoid deflections and deformations of the axis when cooling spindles or to prevent moisture condensation when cooling electrical devices.

Designed for Process Applications

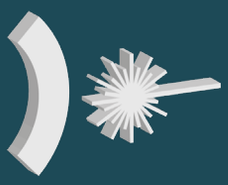
Machine Tools:

spindles, CNC machining centres, milling machines, lathes, EDM, presses, welders, induction machines, water jets, bending machines.



Plastic & Rubber:

moulding, extrusion, blow moulding, thermoforming



Laser

laser and optical source cooling of welding, cutting, marking, medical lasers, 3D printers

Food & Beverage

meat processing, pasta/ bread production, chocolate industry, dairy industry, coffee production, carbonation of mineral water and soft drinks, fruit juice production, beer.

Oenology

temperature control of fermentation processes, clarification, tartaric stabilisation

Printing

flexographic lines, digital printers, offset, UV systems

Chemical Pharmaceutical

tank reactor cooling, cosmetics industry, clean rooms, paint production, electroplating

Medical

MRI, X-ray instrumentation, CT

Biogas

drying systems for biogas to be fed into cogenerators or for the production of biomethane

Technical Features

Cooling Circuit

- Piston compressor (mod. 02-03), rotary compressor (mod. 05-08) or scroll compressor (mod. 10-13)
- New plate heat exchangers optimized for operation at high evaporation temperatures
- New finned coil condensers protected by a metal anti-particulate filter and with reduced tube diameter: they reduce the refrigerant charge content by about 20%
- HP high pressure switch with manual reset
- Thermostatic lamination valve

Non-ferrous atmospheric hydraulic circuit

- Hydraulic circuit at atmospheric pressure built with non-ferrous materials
- New dust-tight HDPE inertial tank equipped with visual level indicator, front connections for filling/draining, overflow and level switch
- Automatic bypass valve in bronze as standard
- Flow switch Standard
- Pressure gauge 0-6 barg

Microprocessor Contror

XW07K manages and optimizes the operation of refrigeration and hydronic circuits. It regulates the ON/OFF of the compressor according to the required water temperature, respecting the minimum operating times for the compressor.

Main Features

- Tw out and T ambient measurement and display
- Antifreeze function for evaporator protection
- Alarm Management: HP
- General alarm free contact
- Remote digital input ON/OFF
- Fine temperature control function (hysteresis ± 1K)
- Dynamic set point function

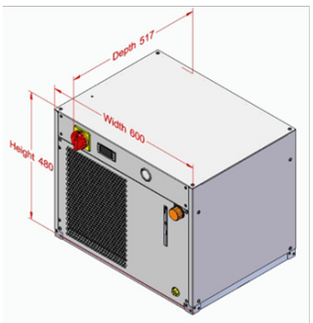
Accessories - Kit

- Water filter: cartrige 100µm
- Pivoting wheels
- Lifting eyebolts
- Vibration dampers
- RS485 ModBus connection

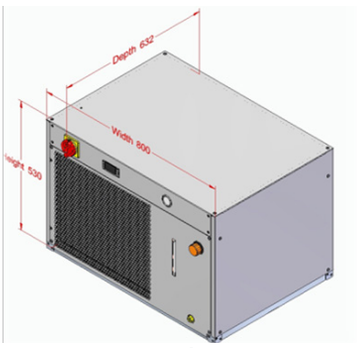
Versions & Options

- Version without tank and without pump
- Version without tank
- Version for low T water outlet -5°C
- Version for low T environment -5°C or -10°C
- LASER version with hot gas injection valve (hysteresis +/-1K)
- Pump options: P3 standard; P5 high head
- Level switch option
- Under-user installation option: non-return valve + solenoid valve
- Multi-pole connector option
- Preheating heater option
- T amb probe option for dynamic set point

Technical Data



Mod. 02-03



Mod. 05-13

	WLA02	WLA03	WLA05	WLA08	WLA10	WLA13
PERFORMANCE						
Cooling Capacity @50Hz (1) [kW]	1,41	1,61	2,50	3,24	4,12	5,05
Cooling Capacity @60Hz [kW]	1,58	1,80	2,80	3,63	4,61	5,66
Total Power Consumption @50Hz(1) [kW]	0,60	0,71	0,74	0,93	1,34	1,67
EER (excluding pump) @50Hz (1)	2,4	2,3	3.4	3.5	3,1	3,0
Evaporator Water Flow Rate @50Hz(1) [l/min]	4,0	4,6	7,2	9.3	11,8	14,5
Evaporator Pressure Drops @50Hz [kPa]	12,0	15,3	10,5	16,4	25,0	36,3
Evaporator Water Flow Rate @60Hz [l/min]	4,5	5,2	8,0	10,4	13,2	16,2
Evaporator Pressure Drops @60Hz [kPa]	15,1	19,2	13,1	20,5	31,4	45,5
ELECTRICAL DATA						
Power Supply [V/ph/Hz]	230-1-50/60	230-1-50/60	230-1-50/60	230-1-50/60	230-1-50	230-1-50
			400-3-50	400-3-50	400-3-50	400-3-50
			460-3-60	460-3-60	460-3-60	460-3-60
Auxiliary Power Supply [V/ph/Hz]	230-1-50/60					
IP Protection Degree (electrical panel)	40	40	40	40	40	40
TECHNICAL DATA						
N° compressors/circuits	1/1	1/1	1/1	1/1	1/1	1/1
N° Axial Fans	1	1	1	1	1	1
Air Flow Rate @50Hz [m³/h]	1820	1820	1820	1820	3415	3415
Fan Power Consumption @50Hz [kW]	0,13	0,13	0,13	0,13	0,30	0,30
Available Head P3 Pump @50Hz [barg]	2,4	2,3	3.9	3.7	3.4	3,2
Rated Power from P3 Pump [kW]	0,37	0,37	0,55	0,55	0,55	0,55
Sound Pressure Level [dB(A)] (2)	64,1	64,1	61,9	61,9	71,8	71,8
Hydraulic Connections Diameter [Rp]	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Tank Volume [dm³]	8	8	20	20	20	20
Width [mm]	601	601	801	801	801	801
Depth [mm]	517	517	632	632	632	632
Height [mm]	477	477	527	527	527	527
Weight empty [kg] (3)	54.3	54.3	75.4	75.4	75.4	75.4

(1) Operating limits for standard chiller: outlet water temperature: +13°/+30°C; ambient air temperature min/max +15°/+45°C

(2) Sound pressure at 1m: average value obtained in a free field on a reflecting plane at a distance of 10m from the unit according to EN ISO 9614-2.

(3) Empty weight of the unit with tank and P3 pump without options/kit. Tolerance +/- 10%