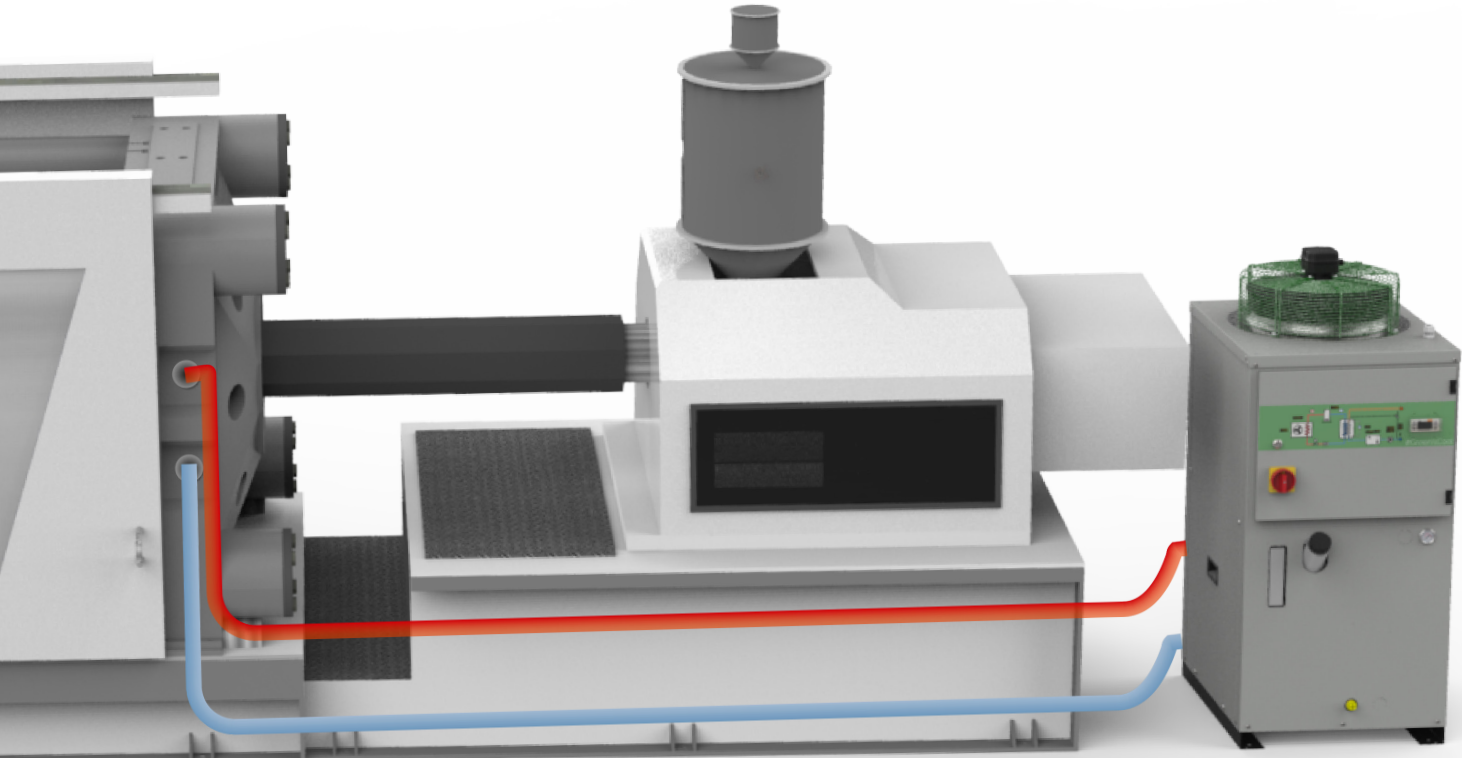


WRA ErP

Air cooled industrial liquid chiller



Compact, reliable and versatile industrial liquid chiller

After thousands of WRA units installed worldwide since 1989, the WRA ErP is the next generation of high efficiency chillers **specifically designed for industrial process cooling**.

WRA ErP is the result of a design that has focused on **reliability, energy efficiency, extended operating limits** and extreme **configurability**.

Thanks to dedicated technological solutions such as oversized heat exchangers, standard electronic expansion valve and new high-efficiency fans, each WRA ErP is characterised by **high thermodynamic performance** that exceeds the most stringent minimum energy efficiency requirements imposed by the **Ecodesign directive** from 2021.

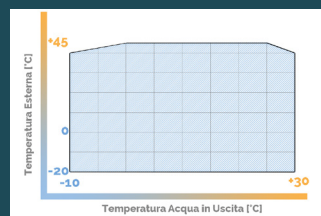


“High thermodynamic performances
in compliance with Ecodesign regulations”



Energy Efficiency

Process chillers operate at high heat loads continuously throughout the year. It is therefore very important that the chiller delivers the highest performance under all operating conditions. All WRA chillers comply with the limits required by ErP2021 - SEPR HT (EU) 2016/2281 - SEPR MT (EU) 2015/1095, making them the best solution for all process applications



Extended operating limits

Thanks to the dedicated versions and accessories, operation at full load is guaranteed up to +45 °C outside air temperature during the summer season and -20 °C during the winter season in the LT version. The standard WRA units produce chilled water with a maximum evaporator outlet temperature of up to +30 °C; minimum standard temperature +5 °C and -10 °C in the BRINE version



New controller SECBlue Light

The new programmable microprocessor control SECBlue LIGHT, thanks to its new and advanced proprietary logic, guarantees and optimises the operation of all WRAs in the various configurations available. SECBlue LIGHT allows both the remote control of the unit and its integration in RS485 ModBus supervisory BMS systems by means of specific accessories



New Configurations

The new LT version for low ambient temperature -20 °C, the Brine version for low water outlet temperature $T_w - 10^\circ\text{C}$, and the new version for pressurised hydraulic circuits extend the technical equipment of the WRA range, which is therefore 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 in accordance with EN60204-1, including: disconnector, numbered electrical cables and standard phase monitor. Standard 50/60HZ dual frequency power supply. Standard IP54 degree of protection (suitable for outdoor installation)

ATMOSPHERIC HYDRAULIC CIRCUIT

made of non-ferrous material, equipped with automatic bypass valve. The HDPE storage tank is thermally insulated and equipped with level indicator and front loading and drainage connections. Centrifugal pumps P3/P4/P6/P5 inverter (optional)

SECBlue light microprocessor Controller

ENANCED OPERATING LIMITS:

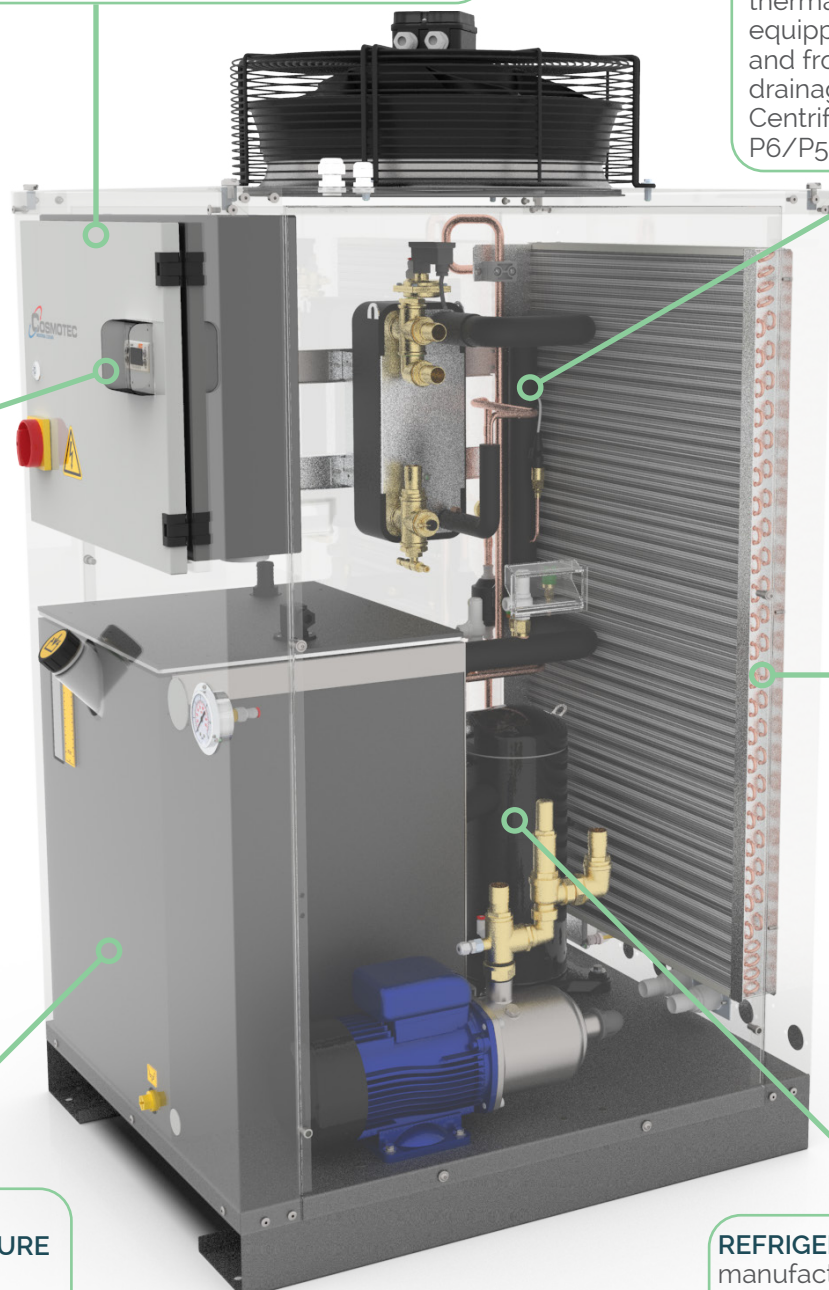
Twout min/max=+5°/+25°C
Tamb min = -5°/+45C

ROBUST AND SELF-SUPPORTING STRUCTURE

with galvanised steel panelling, powder-coated RAL7035. All panels are removable and allow easy access to internal components for maintenance operations.

REFRIGERATION CIRCUIT

manufactured according to the 2014/68/EU directive, it features: scroll compressor; high efficiency plate evaporator; finned coil condenser; thermostatic valve/ electronic expansion. Refrigerant fluid R134a/R410A



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.

Outdoor Installation: the electrical panel manufactured in accordance with EN 60204 and with an IP54 degree of protection allows all WRA units to be installed outdoors.

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.

New version for pressurised hydraulic circuits: includes a cylindrical carbon steel hydraulic tank (pmax 4.5barg), thermally insulated, featuring expansion vessel, automatic vent valve, safety valve and drain valve.

New version for PROCESS COOLING & RENTAL (mod. 0A-5A): includes a new shell and tube evaporator integrated in the cylindrical tank. Very high reliability thanks to the very low risk of ice formation and the possibility of processing liquids that are not perfectly pure.

LASERPACK: all WRA 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 $\pm 0.5K$ under variable load conditions. LASERPACK $\pm 0.1K$ version available, which allows the deviation from the target temperature to be limited to a hysteresis of $\pm 0.1K$.

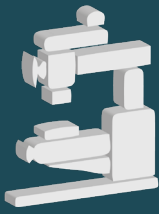
LASERPACK Double Circuit: thanks to the dual cooling circuit equipped with a three-way modulating valve and a second pump dedicated to the optics hydraulic circuit, this option allows independent control of the operating temperature of the laser source and that of the optics.

Electronic Expansion Valve (mod. 20-5A): equipped with sensors on the refrigerant circuit, it allows to optimise the operation of the refrigerant circuit in any thermal load condition, ensuring maximum efficiency at all times. Thanks to a precise control of subcooling and overheating, it is possible to extend the operating range of the chiller, preserving the reliability of the compressor.

ECOFlow AIR Brushless EC axial fans (option): Permanent magnet EC motors use electronic commutation to detect the position of the rotor and regulate the supply current, thus eliminating the need for mechanical brushes to supply current to the motor windings. The elimination of physical contact reduces internal wear on the fan motor and dramatically increases reliability and reduces energy consumption by up to 30%.

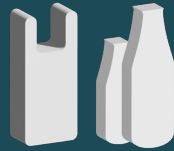


Designed for Process Applications



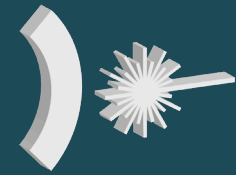
Machine Tools:

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



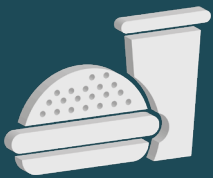
Plastic & Rubber:

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

Refrigeration Circuit

- Compliance with Ecodesign directive ErP2021 - SEPR HT (UE) 2016/2281 - SEPR MT (UE) 2015/1095
- Hermetic scroll compressors protected by a phase sequence control relay
- Refrigerant: R134a (mod.13-18) R410A (mod.20-5A)
- New AISI 316 stainless steel brazed plate evaporators, compact size and high efficiency
- New finned coil condensers protected by a metal anti-particulate filter and with minitubes: refrigerant charge content reduced by about 20%
- HP high pressure switch with manual reset
- Thermostatic lamination valve (mod.13-18)
- Electronic expansion valve (mod.20-5A)
- Low noise axial fan with integrated diffuser

Non-ferrous atmospheric hydraulic circuit

- New dust-tight HDPE inertial tank equipped with visual level indicator, front connections for filling/draining, overflow and level switch
- Automatic bronze bypass valve as standard
- High and low pressure safety valve
- Differential pressure switch
- Pressure gauge 0-6 barg

Electrical Panel

- Built in accordance with EN 60204
- IP54 protection degree: suitable for outdoor installation
- Standard Phase monitor
- Potential free contacts: remote ON/OFF; general alarm
- Automatic circuit breakers on electric loads and contactors

Microprocessor Controller

The new programmable microprocessor control SECBlue LIGHT manages and optimises the operation of the cooling and hydronic circuits. It adjusts the compressor ON/OFF according to the required water temperature, respecting its minimum operating time.

Main Features

- Tw out and ambient measurement and display
- Antifreeze function to protect the evaporator
- Electronic expansion valve management
- Alarm management: HP; LP; antifreeze; tank level
- Free general alarm contact
- Remote ON/OFF digital input
- LASER function for fine adjustment of process temperature (hysteresis $\pm 0,5K$ or $\pm 0,1K$)
- Dynamic set point function

Accessories - Kit

- External flow switch
- Aluminium or polyurethane condenser air filter
- Water filters
- Pivoting wheels
- Lifting eyebolts
- Adjustable feet
- Remote control
- RS485 ModBus connection

Versions & Options

- Version with HDPE atmospheric tank
- Version with steel tank and hydraulic pressurised circuit (pmax 4,5barg)
- Dual-frequency version 400V/3ph/50Hz -460V/3ph/60Hz
- BRINE version for low T water outlet $-10^{\circ}C$
- Version for low ambient T $-20^{\circ}C$
- LASER version single hydraulic circuit (hysteresis $\pm 0,5K$ or $\pm 0,1K$)
- LASER version with double hydraulic circuit (hysteresis $\pm 0,5K$ or $\pm 0,1K$)
- NEW version for PROCESS COOLING & RENTAL (mod. 0A-5A): includes a new shell and tube evaporator integrated in the cylindrical tank.
- Stainless steel pump options: P3 standard; P4; P6;
- P5 centrifugal multistage high-pressure inverter pump ECOFlow WATER
- Flow switch
- Automatic filling for atmospheric / pressurised hydraulic circuits
- Under user installation option - check valve + solenoid valve
- Aluminium or polyurethane air filters
- Multi-pole connector option
- Preheating/antifreeze resistor
- Controller option with RS485 card
- External temperature probe 10m long

Technical Data



WRA13 WRA18 WRA20 WRA25 WRA30 WRA35 WRA50 WRA55 WRA65 WRA80 WRA90 WRA0A WRA5A

PERFORMANCE @50Hz

Cooling capacity @50Hz (1) [kW]	4.7	5.9	7.3	8.7	11.8	13.7	16.7	19.0	24.3	28.7	33.1	39.3	47.5
Total power consumption @50Hz (1) [kW]	1.1	1.5	1.9	2.3	2.8	3.3	4.4	4.3	6.2	6.8	7.9	9.1	11.6
Water flow rate evaporator @50Hz (1) [L/min]	13.4	16.8	21.0	24.8	33.8	39.2	47.8	54.5	69.7	82.3	94.9	112.7	136.2
EER (pump excluded) @50Hz (1)	4.2	3.9	3.8	3.7	4.2	4.1	3.7	4.4	3.9	4.3	4.2	4.3	4.1
SEPR HT (3)	5.38	5.42	5.45	5.18	5.52	5.54	5.37	5.56	5.32	5.49	5.09	5.23	5.13
Cooling capacity @50Hz (2) [kW]	3.4	4.4	5.6	6.6	9.0	10.3	12.7	14.2	18.3	21.6	25.0	29.6	36.0
Total power consumption @50Hz (2) [kW]	1.1	1.5	2.0	2.4	2.9	3.4	4.4	4.5	6.1	6.9	7.9	9.1	11.4
Water flow rate evaporator @50Hz (2) [L/min]	9.7	12.5	16.1	18.9	25.8	29.5	36.3	40.7	52.5	61.9	71.7	84.9	103.2
EER (pump excluded) @50Hz (2)	3.0	2.9	2.9	2.7	3.1	3.0	2.9	3.2	3.0	3.2	3.2	3.3	3.1

ELECTRICAL DATA

Power supply unit [V/Ph/Hz]	400/3/50												
Power supply unit [V/Ph/Hz]	400/3/50 - 460/3/60												
Auxiliary power supply [V/Ph/Hz]	24 VAC												
IP degree of protection	IP54												

TECHNICAL DATA

Refrigerant	R134a						R410A						
No. of compressors/circuits [#]	1/1												
Number of axial fans[#]	1												
Available head pressure pump P3 @50Hz [barg] (1)	3.0	2.9	2.8	2.5	3.5	3.3	2.9	3.9	3.7	3.4	3.0	3.6	3.4
Maximum absorbed power pump P3 @50Hz [kW]	0.46	0.46	0.46	0.46	0.69	0.69	0.69	1.01	1.01	1.01	1.01	1.7	1.7
Sound pressure level [dB(A)] (4)	37.5	37.5	40.4	40.4	46.9	46.9	47.9	60	60	61	69	67	67
Diameter of hydraulic connections [Rp]	3/4"G	3/4"G	3/4"G	3/4"G	1"G	1"G	1"	1"1/4	1"1/4	1"1/4	1"1/4	1"1/2	1"1/2
Tank volume [dm ³]	40	40	40	40	98	98	98	180	180	180	180	180	180
Width [mm]	560	560	560	560	740	740	740	900	900	900	900	1140	1140
Depth [mm]	720	720	720	720	930	930	930	1200	1200	1200	1200	2084	2084
Height [mm]	1290	1290	1310	1310	1550	1550	1550	1992	1992	1992	1992	2074	2074
Weight empty [kg] (5)	133	140	143	145	201	200	204	320	360	390	390	450	470
Operating weight [kg] (6)	178	185	188	190	311	311	314	--	--	--	--	--	--

(1) Data referring to inlet/outlet water temperature 20/15°C, ambient temperature 32°C, @50Hz

(2) Data referring to inlet/outlet water temperature 12/7°C, ambient temperature 35°C, @50Hz

(3) Data declared according to the European Regulation (EU) 2016/2281 for high temperature process chillers

(4) Sound pressure at 10m: 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. Values with tolerance ± 2 dB.

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

