



cosmotec

your cooling solutions

Cutting-edge Technologies for Even Greener Hydrogen

- Chiller and free cooling for electrolysers cooling
- Outdoor Free Cooling air conditioning units for containers
- Air conditioning units for electrical enclosures



Green Hydrogen

The energy source of the future

The European Union for 2050 aims for decarbonization and the **reduction of the dependence on fossil fuels**: green hydrogen thus becomes a key element of this energy transition.

The EU's strategy envisions an increase in the share of green hydrogen in the energy mix, rising from the current 2% to **13-14% by 2050**.

To achieve this goal, the installation of 800 GW of electrolyzers, primarily powered by renewable sources such as wind and solar, will be necessary.



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Green hydrogen is an environmentally friendly energy solution in various sectors (e.g., transportation, energy production, process industry).

Advantages

High energy density per unit of mass

150 times greater than lithium-ion batteries.

Long-term storage capability in various forms

gaseous, liquefied, and in solid carriers.

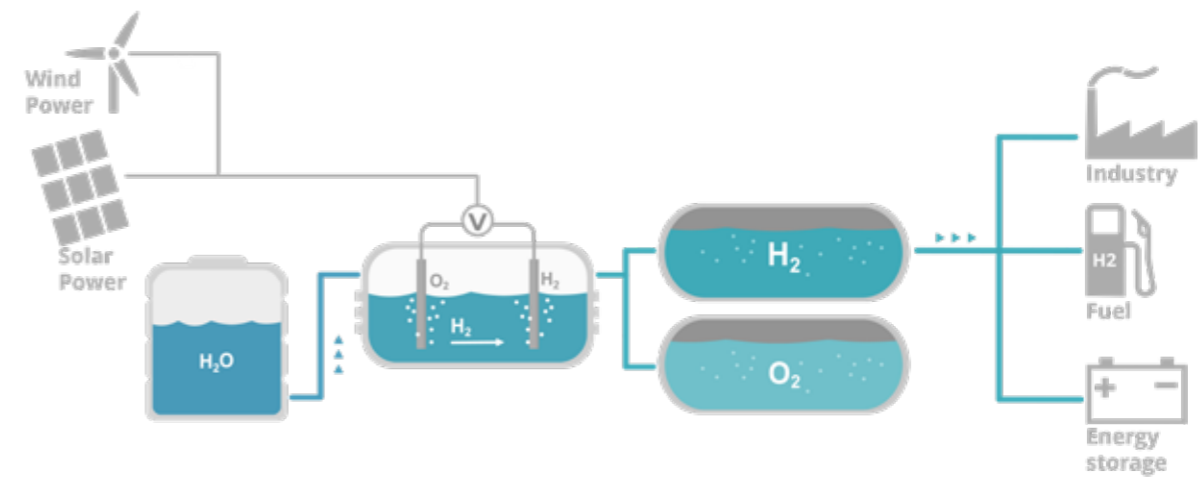
Storage system safety ensured by new technological solutions allowing use at pressures of up to 1000 bar

Lower costs

for the same transported energy, hydrogen costs an order of magnitude less than electrical lines.

Short refueling times

for fuel cell vehicles compared to the long recharging times required for battery-powered vehicles



Chiller and Free Cooling Electrolysers cooling

Cosmotec industrial liquid chillers are an optimal solution for cooling the electrolyte cell of electrolysers (PEM, alkaline, SOEC) and for the purification phase (Deoxo and Drying units).

They are designed to operate **continuously and reliably** 24/7 and **comply with the highest energy efficiency standards** defined by the European Ecodesign ErP regulation.

Vertical WRA ErP

The new **Vertical WRA ErP** chillers are the result of a design focused on reliability, energy efficiency, extended operational limits, and extreme configurability.



WRA ErP2021	M.U.	WRA13	WRA18	WRA20	WRA25
Cooling Capacity (1)	kW	4,7	5,9	7,3	8,7
Absorbed power	kW	1,1	1,5	1,9	2,3
EER (without pump) (1)		4,2	3,9	3,8	3,7
SEPR HT (2)		5,4	5,4	5,4	5,2
Power Supply	V/Ph/Hz	400/3/50 - 400/3/50 - 460/3/60			
Hydraulic connections	Rp	3/4"	3/4"	3/4"	3/4"
Height x Width x Depth	mm	560x720x1290		560x720x1310	

WRA ErP2021	M.U.	WRA30	WRA35	WRA50	WRA55	WRA65	WRA80	WRA90	WRA0A	WRA5A
Cooling Capacity (1)	kW	11,8	13,7	16,7	19	24,3	28,7	33,1	39,3	47,5
Absorbed power	kW	2,8	3,3	4,4	4,3	6,2	6,8	7,9	9,1	11,6
EER (without pump) (1)		4,2	4,1	3,7	4,4	3,9	4,3	4,2	4,3	4,1
SEPR HT (2)		5,5	5,5	5,4	5,6	5,3	5,5	5,1	5,2	5,1
Power Supply	V/Ph/Hz	400/3/50 - 400/3/50 - 460/3/60								
Hydraulic connections	Rp	1"	1"	1"	1"1/4	1"1/4	1"1/4	1"1/4	1"1/2	1"1/2
Height x Width x Depth	mm	740x930x1550			900x1200x1992			1140x2084x2074		

(1) Data referring to outlet water inlet temperature 20/15°C - Air temperature 32°C. @50Hz
(2) Data declared according to European Regulation (EU) 2016/2281 for high temperature process chillers

Precision WLA ErP

The WLA Precision units expand and complement the range of WRA ERP liquid chillers, bringing the maximum cooling capacity to 160 kW.

Thanks to meticulous design that prioritizes reliability and energy efficiency, the WLA Precision range is characterized by high thermodynamic performance, exceeding the most stringent minimum energy efficiency requirements of ERP.



WLA Precision	M.U.	WLA5A	WLA8A	WLA0B	WLA4B	WLA7B	WLA0C	WLA5C	WLA0D	WLA5D
Cooling Capacity (1)	kW	50,1	60,7	77,6	84,6	98,1	109,5	131,9	145,7	159,8
Absorbed power	kW	12,5	16,3	18,8	20,6	24	28	30,7	34,3	39
EER (without pump) (1)		4	3,7	4,1	4,1	4,1	3,9	4,3	4,2	4,1
SEPR HT (2)		5,8	5,4	5,1	5,2	5,4	5,3	5,4	5,4	5,4
Power Supply	V/Ph/Hz	400/3/50								
Hydraulic connections	Rp	1" 1/2	2"	2"	2"	2"	2"1/2	2"1/2	2"1/2	2"1/2
Height x Width x Depth	mm	1135x2468x2140		1135x2468x2178			1135x3468x2178			

(1) Data referring to outlet water inlet temperature 20/15°C - Air temperature 32°C. @50Hz
(2) Data declared according to European Regulation (EU) 2016/2281 for high temperature process chillers

Compact WLA

The WLA Compact industrial chillers have been designed to provide precise control of the process fluid temperature and reliable operation.



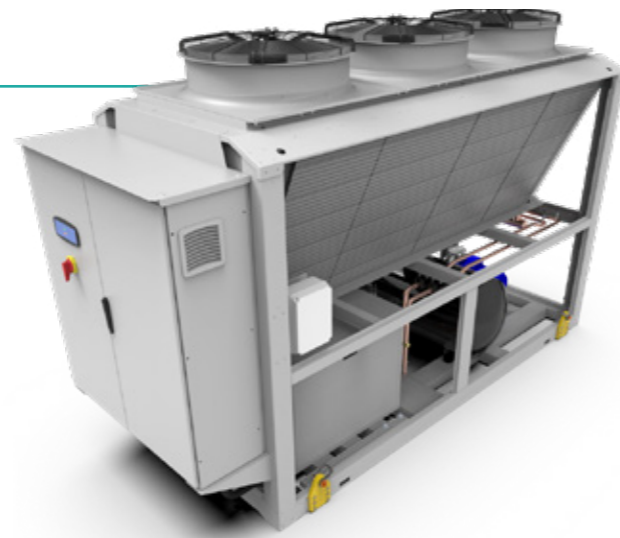
WLA compact	M.U.	WLA02	WLA03	WLA05	WLA08	WLA10	WLA13	
Cooling Capacity (1)	kW	1,4	1,6	2,5	3,2	4,1	5	
Absorbed power	kW	0,6	0,7	0,7	0,9	1,3	1,7	
EER (without pump) (1)		2,4	2,3	3,4	3,5	3,1	3	
Power Supply	V/Ph/Hz	230-1-50/60		230-1-50/60		230-1-50		
		400-3-50 / 460-3-60						
Hydraulic connections	Rp	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	
Height x Width x Depth	mm	601x517x477			801x632x527			

(1) Operating limits for standard chiller: outlet water temperature: +13°/+30°C; ambient air temperature min/max +15°/+45°C
(1) Data referring to outlet water inlet temperature 20/15°C - Air temperature 32°C. @50Hz

WPA / WPAmini

ABCDEFGH

Liquid chillers with cooling capacities ranging from 160 kW to 550 kW, designed for 24/7, 365-day-a-year process cooling applications, air-cooled with two refrigeration circuits, plate/pipe bundle evaporator, and tandem/trio-optimized scroll compressors for use with refrigerants such as R410A and low-GWP ecological fluids like R454B.



WPAmini	M.U.	WPA030	WPA045	WPA050	WPA055
Cooling Capacity (1)	kW	106,8	136,6	168,6	194,2
Absorbed power (2)	kW	24,6	34,8	40,7	48,9
SEPR		5,26	4,75	5,06	5,01
Power Supply	V/Ph/Hz	400-3-50 / 460-3-60			
Height x Width x Depth	mm	2350x1370x3650			

(1) Evaporator water IN/OUT 12/7 °C; condensing air 35 °C. Unit at full load.
 (2) In accordance with ISO 3744, the contribution of pumps is not considered.
 WPAmini is also available in Low Noise and Free Cooling versions.



All chillers in the WPA range are characterized by high levels of energy efficiency and comply with the limits required by Directive 2009/125/EC Ecodesign ErP 2021.



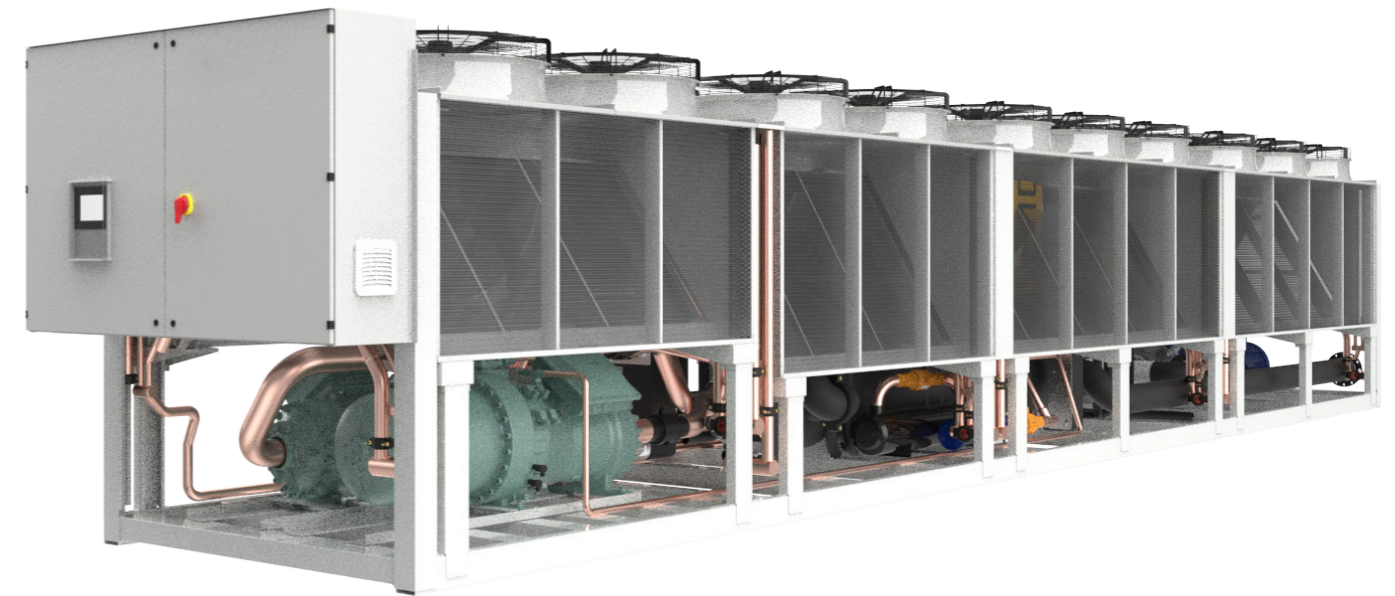
WPA	M.U.	WPA060	WPA070	WPA080	WPA090	WPA100
Cooling Capacity (1)	kW	210,5	237,7	298,3	314,2	343
Absorbed power (2)	kW	51,8	63,2	71,6	82	91,7
SEPR		5,36	5,36	5,02	5,72	5,68
Power Supply	V/Ph/Hz	400-3-50 / 460-3-60				
Height x Width x Depth	mm	2410x3100x2206				

WPA	M.U.	WPA110	WPA120	WPA140	WPA160	WPA180	WPA200	
Cooling Capacity (1)	kW	416,3	460,3	499,9	564,9	657,3	727,4	
Absorbed power (2)	kW	99,7	114,1	129,5	132,1	174,1	200,6	
SEPR		5,88	5,62	5,87	5,84	5,79	6,18	
Power Supply	V/Ph/Hz	400-3-50 / 460-3-60						
Height x Width x Depth	mm	2410x4400x2206			2410x5770x2206			

(1) Evaporator water IN/OUT 12/7 °C; condensing air 35 °C. Unit at full load.
 (2) In accordance with ISO 3744, the contribution of pumps is not considered.
 WPAmini is also available in Low Noise and Free Cooling versions.

WSA ErP

ABCDEFGH



WSA ErP is a range of high-efficiency, environmentally friendly air-cooled liquid chillers with free-cooling technology and cooling capacities ranging from 290 to 1800 kW.

Designed for 24/7, 365-day-a-year process cooling applications, the new WSA ErP units feature one or two refrigeration circuits with screw compressors and use dry expansion tube and high-surface area evaporators.

The WSA units are available with R513A refrigerant (GWP = 573) and also in an eco-friendly version with R1234ze refrigerant, which ensures a reduction in global warming potential (GWP = 7).



WSA	M.U.	WSA90	WSA110	WSA140	WSA160	WSA180
Cooling Capacity (1)	kW	192	243	289	358	397
Absorbed power (2)	kW	69	82	109	121	140
Power Supply	V/Ph/Hz	400-3-50				
Height x Width x Depth	mm	2485x1140x4330	2485x2280x3205	2485x2280x4330		

WSA	M.U.	WSA200	WSA220	WSA250	WSA280	WSA300	WSA320	WSA360
Cooling Capacity (1)	kW	442	501	542	635	691	764	834
Absorbed power (2)	kW	141	166	180	211	231	236	279
Power Supply	V/Ph/Hz	400-3-50						
Height x Width x Depth	mm	2485x2280x5875			2485x2280x6955		2485x2280x8080	

WSA	M.U.	WSA380	WSA420	WSA480	WSA560	WSA640	WSA700
Cooling Capacity (1)	kW	952	983	1113	1165	1287	1451
Absorbed power (2)	kW	299	326	368	407	443	480
Power Supply	V/Ph/Hz	400-3-50					
Height x Width x Depth	mm	2485x2280x9582		2485x2280x10707		2485x2280x11830	

(1) Evaporator water IN/OUT 12/7 °C; condensing air 35 °C. Unit at full load.
 (2) In accordance with ISO 3744, the contribution of pumps is not considered.
 WSA is also available in the version with Refrigerant Gas R1234ze, and in the Free Cooling version.

Industrial AC units

Cooling solutions for electrical enclosures

The conditioning of electrical panels is crucial in all applications to ensure the proper operation of the hydrogen production process and to prevent production downtime.

The **Cosmotec** range of conditioners provides protection against: Overheating and condensation, which result from high temperature and humidity levels. dust and/or sand, corrosive agents, etc.

This prevents wear and tear, malfunctions, and component failures while ensuring the reliability, safety, and efficiency of the electrolyzer.

Protherm e Compact Protherm

CVE/CVO - CNE/CNO

Protherm offers a wide range of conditioners to meet the various customer needs for cooling electrical panels for industrial applications (CVE).



CVE	M.U.				
Cooling capacity	W	da 360 a 560			
Power supply	V/ph/Hz	230-1-50/60	115-1-60	400-2-50	460-2-60

CNE	M.U.				
Cooling capacity	W	da 400 a 1000			
Power supply	V/ph/Hz	230-1-50/60	115-1-60	400-2-50	460-2-60

SlimIn

CDE

Slim In CDE is the range of ultra-thin conditioners designed for external mounting, semi-flushed, or fully flushed installation, ideal for installations that require minimal encumbrance and reduced protrusions from the panel. The unit's features allow for easy and fast installation.



CDE	M.U.						
Cooling capacity	W	da 500 a 4000					
Power supply	V/ph/Hz	230-1-50/60	115-1-60	400-2-50	460-2-60	400-3-50	460-3-60



FlexIn

CDI

Modern industrial cabinets and servers require more precise temperature control and low energy consumption, even with variable thermal loads. In the past, these two needs were incompatible or only partially met, but now both are available in the new FLEX IN CDI electrical panel air conditioner with inverter technology.



CDI	M.U.			
Cooling capacity	W	da 2000 a 4200		
Power supply	V/ph/Hz	110...240-1-50/60	380...480-3-50/60	



Module

EVE

Module air conditioners are the best technical and cost-effective solution for conditioning long rows of electrical cabinets when large cooling capacities are required.



MODULE	M.U.				
Cooling capacity	W	da 5800 a 10000			
Power supply	V/ph/Hz	400-3-50	460-3-60		



Smart

EVE03H

The Smart industrial air conditioner is the ideal solution because its horizontal layout, with compact height and depth dimensions, allows for easy and immediate installation on machinery or control panels.



SMART	M.U.		
Cooling capacity	W	420	
Power supply	V/ph/Hz	2301-50/60	



Top

ETE

Roof-mounted industrial air conditioners allow for the cooling of electrical panels even in situations where space is limited, such as in cabinet arrays or when escape routes need to be kept clear for safety reasons.



TOP	M.U.						
Cooling capacity	W	da 500 a 4000					
Power supply	V/ph/Hz	230-1-50/60	115-1-60	400-2-50	460-2-60	400-3-50	460-3-60



Condizionatori outdoor Free Cooling per container

In the event that the electrolyzer is installed inside a container, Cosmotec can provide four different types of precision conditioning systems that can be installed either inside or outside the container itself.

These units can be equipped with the Free Cooling option for maximum energy cost savings and can meet various installation needs thanks to the numerous available options and configurations. Additionally, they can be equipped with inverter technology, which is ideal for managing variable thermal loads and optimizing temperature control.

Application:
Conditioning of hydrogen treatment units/container

Cooling Capacity:
4 ÷ 35 kW





COSMOTEC

Industrial Cooling

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