

Informative Brochure



Eco Friendly Pool

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Informative brochure
for the eco friendly pool

piscinity





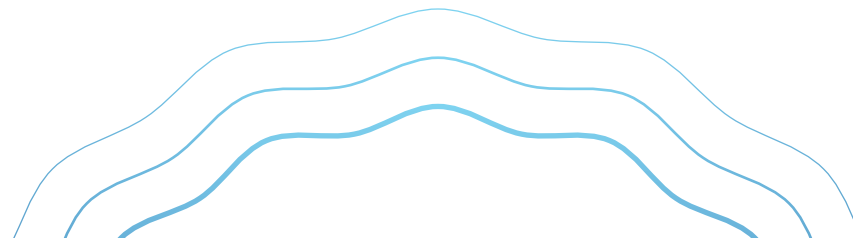
We have the pleasure to introduce our new innovative section!

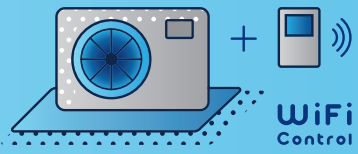
“DIVE INTO SUSTAINABLE POOL SOLUTIONS”

Welcome to the world of the eco-friendly pool, where luxury meets sustainability. In our times, the need to protect the environment is more urgent than ever. Traditional pools, despite the joy they offer, often come with high energy and water consumption, as well as a significant carbon footprint.

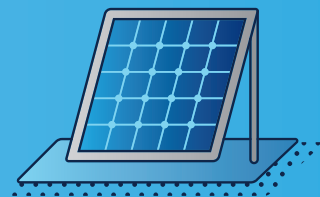
Responding to these challenges, we present to you the eco-friendly pool – an innovative solution that combines technology with ecological consciousness. Our goal is to create a space of refreshment and relaxation that harmonizes with nature and reduces environmental impacts.

In this brochure, you will discover how the eco-friendly pool can reduce the carbon footprint, save water and energy, and provide a healthy and safe environment for you and your family. Join us on this journey towards a greener and more sustainable future without sacrificing the comfort and quality you deserve.

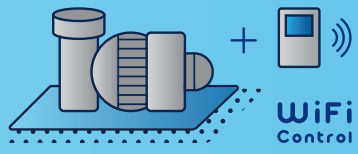
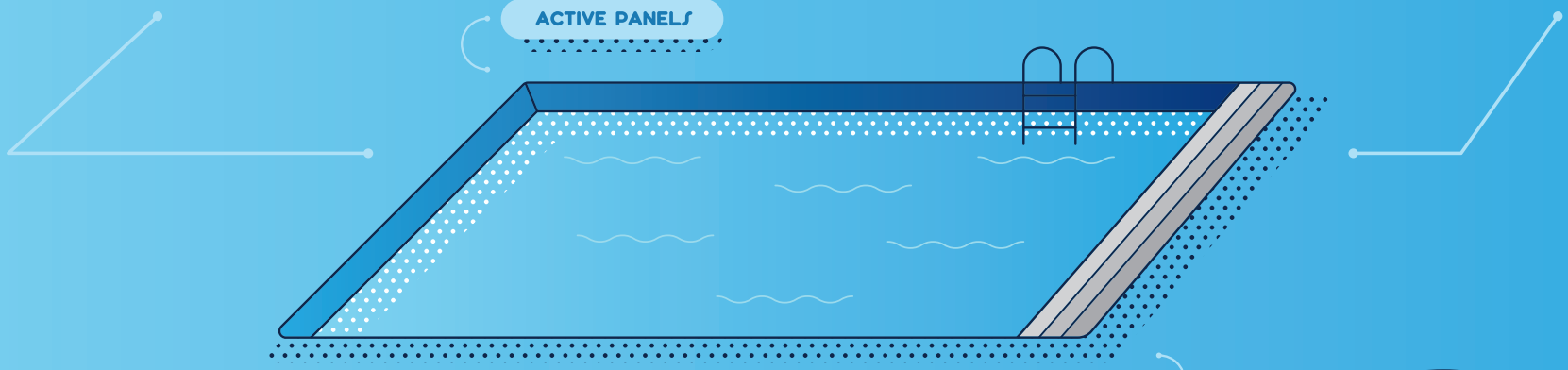




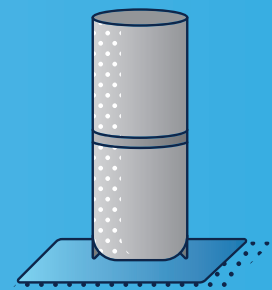
HEATING PUMP



SOLAR PANELS



RECIRCULATION PUMP



CARTRIDGE FILTER



01

Construction of pool framework with active panels

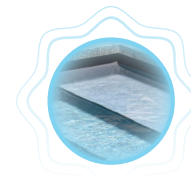
Building a pool with panels is based mainly on standardized methods, without really calling them prefabricated, and without any restrictions to the size and shape of the pool. For this reason small-scale license is required.

The swimming pool with panels is a quicker solution than the pool that will be made from conventional concrete, providing reliability and robust construction, precisely because it is based on standardization and serves cases of private or professional construction that either have a tight implementation schedule or need to limit the nuisance to the nearby environment. At the same time, our company provides 30 years of guarantee for the pool frame.

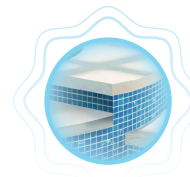
"Our company uses active molds (panels) from the French company SolidPool, which are made from 100% recycled plastic. This allows us to construct pools of any shape and size, including overflow pools."



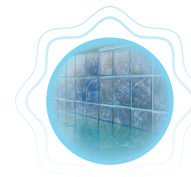
Solid panels of SolidPool® Company allow any final surface such as liner, mosaic tiles, tiles and micro cement quartz system (Pebble). The ability to choose any final surface for the swimming pool constructed with panels has been European patented by SolidPool® as a patent and gives a unique advantage to our future customers and our company.



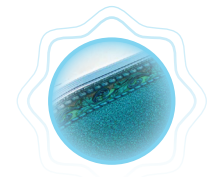
Liner



Mosaic tiles



Tiles



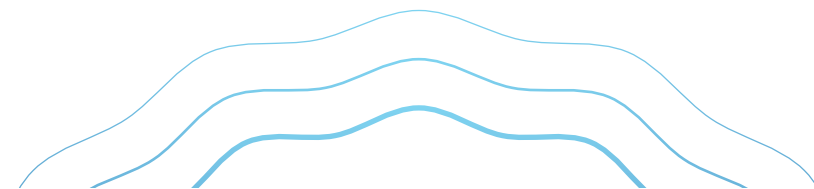
Quartz system

The swimming pool, which will be constructed with panels, is reinforced by concreting firstly the bottom of the pool and then the walls. After concreting, the panels of the pool walls remain and are not removed as it happens with the conventional concrete construction.

Carbon footprint assessment for pool construction

Dimensions (Length x Width x Depth)	Concrete quantity		Carbon Footprint (Co2)		Deviation Percentage (%)
	Conventional Constr.	Panel Construction	Conventional Constr.	Panel Construction	
3 x 6 x 1.50	14,15 m ³	8,65 m ³	3.537,50 kg	2.162,50 kg	63,58
4 x 8 x 1.50	20,60 m ³	12,80 m ³	5.150,00 kg	3.200,00 kg	60,94
5 x 10 x 1.50	28,25 m ³	17,75 m ³	7.062,50 kg	4.437,50 kg	59,15
6 x 12 x 1.50	37,10 m ³	23,50 m ³	9.275,00 kg	5.875,00 kg	57,87
7 x 14 x 1.50	47,15 m ³	30,05 m ³	11.787,50 kg	7.512,50 kg	59,91
8 x 16 x 1.50	58,40 m ³	37,40 m ³	14.600,00 kg	9.350,00 kg	56,15

The pool construction with panels is more environmentally friendly because it results in a significant smaller carbon footprint



O2

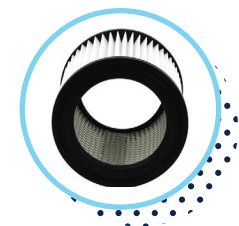
Cartridge filters

A Cartridge Filter does not require reverse operation for cleaning (Backwash). This has several benefits:

- ≈ **Less water loss:** Much less water is discharged into the drainage, i.e., up to 6,000 liters of water (6m³) per year compared to a traditional sand filter.
- ≈ **Energy savings for heated pools:** reverse operation for cleaning (Backwash) leads to the need for additional pool heating due to the added "colder" water
- ≈ **Less chemicals:** the added fresh water leads to an imbalance in the chemical balance of the pool. This requires monitoring of chemical parameters and immediate action to return the main chemical concentrations to the level they were before the reverse operation for cleaning (Backwash).
- ≈ **Better water clarity:** The filtration quality in cartridge filters is 20μ (micrometers) whereas in traditional sand filters it is 50 μ, meaning two and a half (2.5) times better quality.

- ≈ **Larger filtration surface:** The filtration surface in cartridge filters is much larger than in traditional sand filters, resulting in less frequent cleaning and much slower filtration speed.
- ≈ **Longer warranty:** The warranty for the filter housing is 10 years

Therefore, much better water quality.



Filter comparison table

Filter (Description)	Diameter (mm)		Water Supply (m ³)		Filtration Area		Filtration Velocity	
	Cartridge	Sand	Cartridge	Sand	Cartridge	Sand	Cartridge	Sand
H-16-0314 Clean & Clear CC50	394		5		4,70 m ²		1,06 m ³ / h / m ²	
H-16-0315 Clean & Clear CC75	394	480	8	8,5	7,00 m ²	0,72 m ²	1,14 m ³ / h / m ²	11,75 m ³ / h / m ²
H-16-0316 Clean & Clear CC100	394		10		9,30 m ²		1,08 m ³ / h / m ²	
H-16-0317 Clean & Clear CC150	394	610	14	14	13,90 m ²	1,17 m ²	1,01 m ³ / h / m ²	11,98 m ³ / h / m ²
H-16-0318 Clean & Clear CC200	394		18		18,60 m ²		0,97 m ³ / h / m ²	
H-16-0310 Clean & Clear Plus CC+240	546		10		22,30 m ²		0,45 m ³ / h / m ²	
H-16-0340 Clean & Clear Plus CC+320	546		14		29,70 m ²		0,47 m ³ / h / m ²	
H-16-0301 Clean & Clear Plus CC+420	546	762	22	22	39,00 m ²	1,82 m ²	0,56 m ³ / h / m ²	12,07 m ³ / h / m ²
H-16-0332 Clean & Clear Plus CC+520	546	914	30	32	48,30 m ²	2,62 m ²	0,62 m ³ / h / m ²	12,20 m ³ / h / m ²



O3

Pool covers

The use of a cover on the pool has many benefits, including:

Reduction of heat loss

The cover can maintain the water temperature in the pool, minimizing heat loss and saving energy required for heating.

Reduction of evaporation

Using a pool cover can significantly reduce water evaporation compared to a pool without a cover. The cover prevents water evaporation, reducing the need for frequent water top-ups and consumption. The difference in evaporation depends on many factors such as air temperature, humidity, wind intensity, and water temperature. Generally, however, the use of a pool cover can reduce water evaporation by a percentage that can reach up to 90% compared to a pool without a cover. This is because the cover creates a "barrier" above the water surface, which reduces evaporation due to the decrease in heat loss and interference with the water surface from atmospheric conditions.

Reduction of pollution

The cover protects the water from the entry of insects, leaves, and other pollutants, helping to maintain water cleanliness.

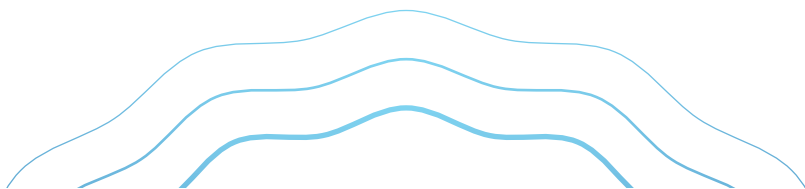
Safety

Some pool covers can function as safety measures for children and pets, preventing any accidents related to pool access



Reduction of chemical usage

As the cover protects the water from external interference, it can reduce the need for chemical usage such as chlorine, etc.



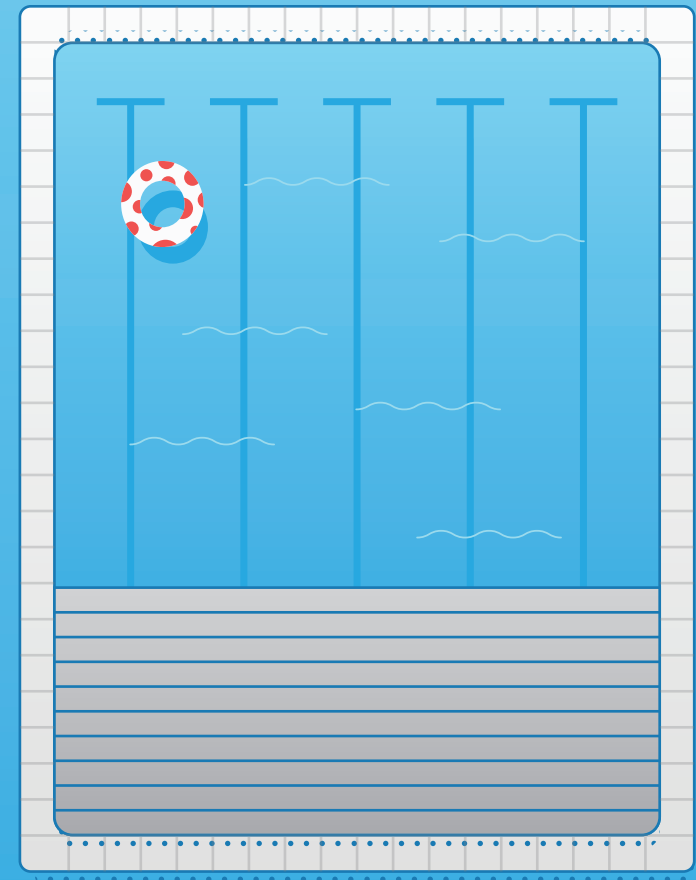
The estimated water evaporation is approximately between 4 and 8 millimeters per day (depending on conditions).

Let's assume that the estimated evaporation is 6 millimeters per day. In a pool with a water surface area of 50 square meters (for example, length 10 meters and width 5 meters).

There will be water evaporation $50\text{m}^2 \times 6 = 300$ liters

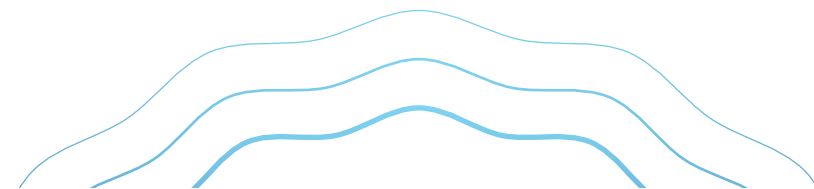


Therefore, under the given conditions, we estimate that approximately 300 liters of water evaporate from the pool daily. This may vary depending on conditions and the region.



Pool Water evaporation

Dimensions (Length x Width x Depth)	Water evaporation per day (liters)		Water evaporation per year (liters)		Savings liters
	Without cover	With cover	Without cover	With cover	
3 x 6 x 1.50	108	10,80	39.420	3.942	35.478
4 x 8 x 1.50	192	19,20	70.080	7.008	63.072
5 x 10 x 1.50	300	30,00	109.500	10.950	98.550
6 x 12 x 1.50	432	43,20	157.680	15.768	141.912
7 x 14 x 1.50	588	58,80	214.620	21.462	193.158
8 x 16 x 1.50	768	76,80	280.320	28.032	252.288





O4

Variable speed

Recirculation Pump (inverter)

The use of a variable speed pool circulation pump has many benefits compared to a simple pool pump. Among these benefits are:

• **Energy savings:** Variable speed pumps can adjust their speed according to the pool's needs. This means they do not constantly operate at maximum power like simple pumps, but adjust their power according to the volume of water and system requirements. This can lead to significant energy savings.

• **Reduced noise:** Variable speed pumps operate at lower noise levels compared to simple pumps, as they do not constantly operate at maximum power.

• **Longer lifespan:** Adjusting the speed according to the needs reduces stress and wear on the pump parts, leading to a longer lifespan of the equipment.

• **Better pool control:** The ability to adjust the pump to the pool's needs allows better control of temperature and water circulation, providing a more efficient and economical system.

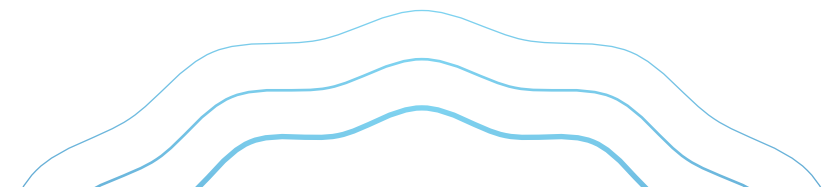
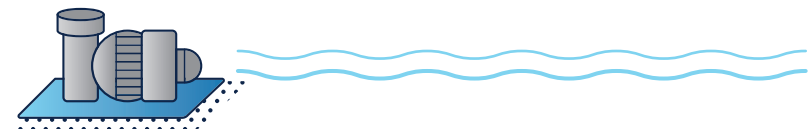
Overall, using a variable speed pool circulation pump is a smart investment that can bring multiple benefits in terms of energy savings, performance, and comfort.

Examples

of energy consumption for a 5-month period.

Information source: www.cybat-plombierparis.com

- Air conditioning unit (for 20 m² space) 4.500 Kwh
- Variable speed pump (inverter) 648 Kwh
- Pump without variable speed 2.475 Kwh
- Desktop computer (PC) 600 Kwh



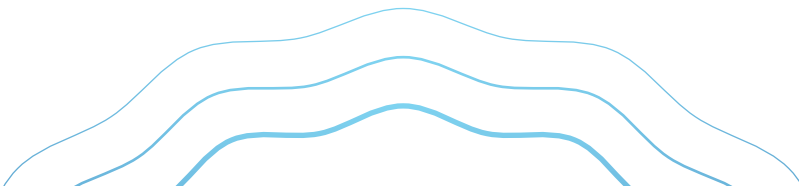
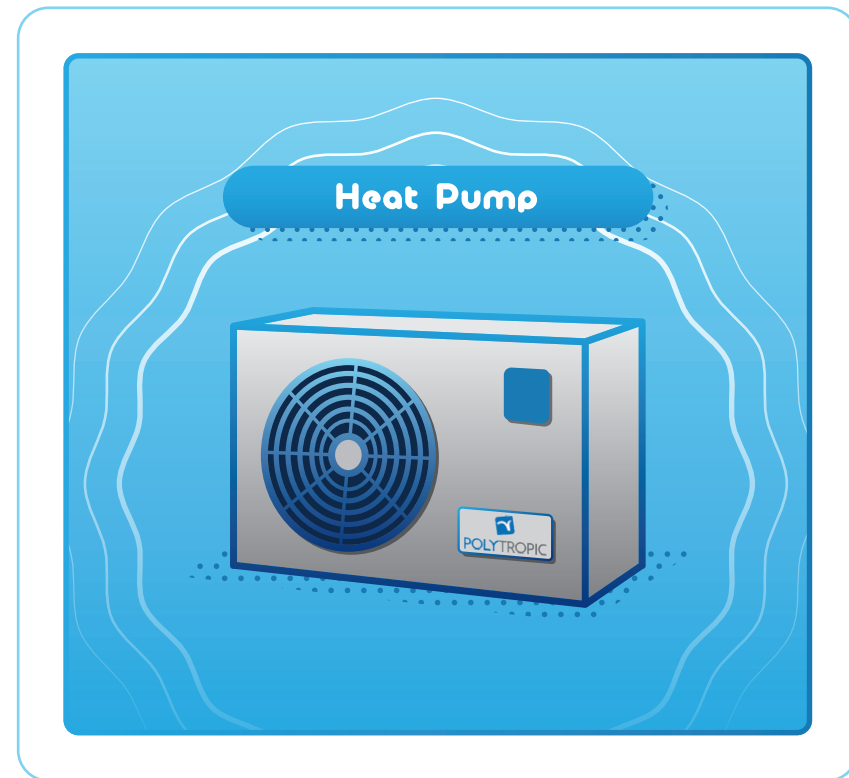
O5

Pool heating with heating pump

Heat pumps are an excellent choice for pool heating, offering many benefits. Among these are:

- **Lower Operating Costs:** Heat pumps utilize heat from the air or water to warm the pool water. This is usually more cost-effective than heating with traditional methods such as heating elements or fuels.
- **Energy Efficiency:** Heat pumps can produce multiple times the energy they consume. This makes them an energy-efficient choice for pool heating.
- **Environmental Friendliness:** Since heat pumps use heat from natural sources like the air or water, they do not produce greenhouse gas emissions or other pollutants, making them an environmentally friendly option.
- **Continuous Operation:** Heat pumps can operate in nearly any climate condition, making them ideal for heating pools in various regions and weather conditions.
- **Long-Term Performance:** Heat pumps typically have lower maintenance costs compared to other heating systems and can last for many years with proper upkeep.

Overall, heat pumps are an effective and economically friendly choice for pool heating, offering environmental benefits as well.





Connecting Your Heat Pump to Your Home Wi-Fi

The POLYCONNECT Pro collects and displays all data from your connected equipment in real-time.

POLYCONNECT

1 Data can be viewed and controlled from a computer, tablet, or smartphone.

2 Information is transmitted to both the pool professional and the POLYTROPIC Technical Service, who can anticipate any issues.

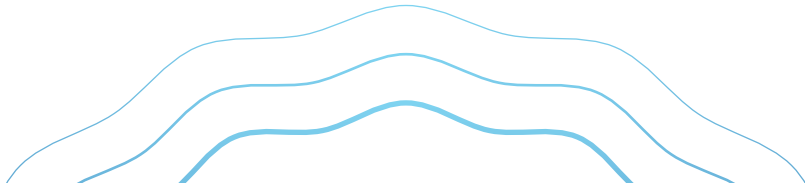
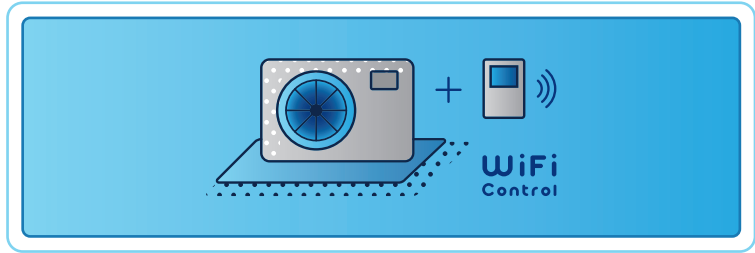
3 In case of malfunction, our technicians are immediately notified and can intervene remotely depending on the problem.

4 No need to travel to identify the issue

5 It can be installed on all Polytropic models.

6 Energy consumption reduction.

7 Warranty extension by 2 years.



07

Pool heating with solar panels

Solar panels are an especially environmentally friendly choice for heating pools. By using solar panels, we keep our environment intact, reducing greenhouse gas emissions and our dependence on non-renewable energy sources.

The benefits of pool heating with solar panels are numerous and varied

Let's have a look at some:

☞ **Cost Savings:** Using solar panels to heat your pool reduces operating costs compared to using traditional heating systems, such as heat exchangers or electric heaters.

☞ **Environmental Friendliness:** The use of solar panels is environmentally friendly and reduces CO2 emissions compared to other heating sources based on fuels.

☞ **Energy Self-Sufficiency:** Solar panels operate using natural sunlight, offering energy self-sufficiency and independence from grid energy sources.

☞ **Extended Pool Use:** Heating with solar panels allows the pool to maintain the desired temperature for a longer period, extending the period of pool use.

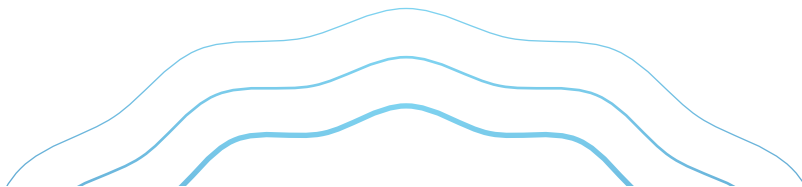
☞ **Reduced Maintenance:** Solar panels require less maintenance compared to other heating systems, as they do not contain moving parts or complex systems.

These are some of the main benefits of pool heating with solar panels. Each of these benefits reinforces the choice for a more sustainable and cost-effective pool heating solution.

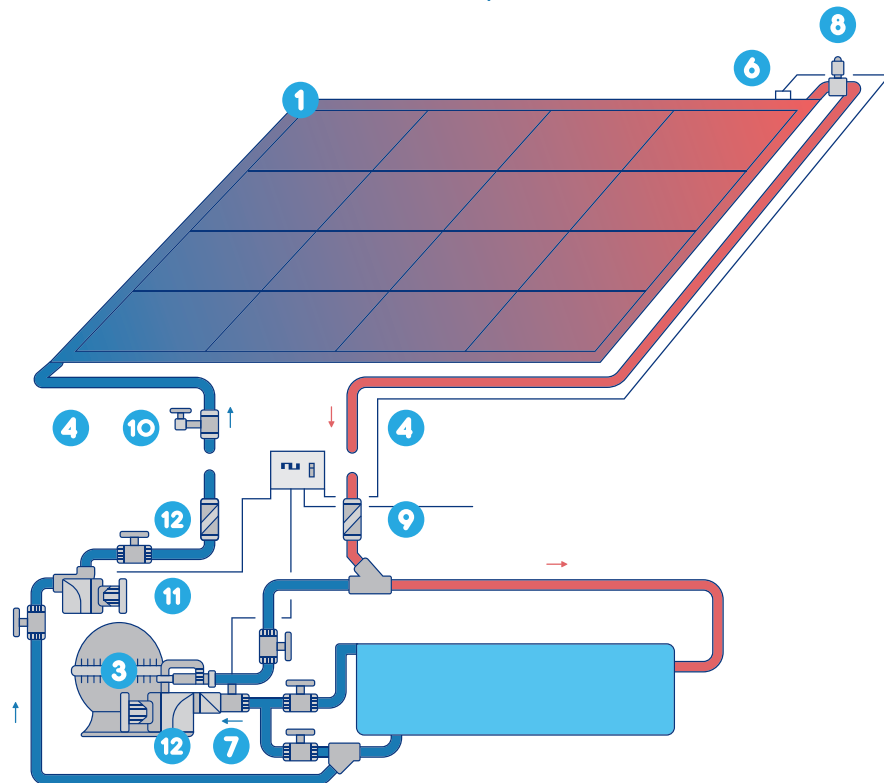
In detail!

Look at the diagram of the next page and read below:

- | | |
|---|---|
| 1. Solar panels | 6. Temperature sensor on the pool water |
| 2. Pool water temperature setting Differential thermostat | 7. Relief valve |
| 3. Pool filter | 8. Stop cock (downdraft brake) |
| 4. Piping network for solar panels | 9. Drain valve |
| 5. Temperature sensor on the panels | 10. Recirculation pump for the solar panels |
| | 11. Non-return valve |



HEATING SCHEME with solar panels



Overall, the parallel operation of solar panels and a heat pump offers a flexible and efficient heating system for the pool, ensuring comfortable and economical use throughout the year.

- **Energy Savings:** During days without sunlight, the heat pump can take over pool heating, saving energy from the grid or other energy sources.
- **Continuous Heat Supply:** The heat pump can ensure a steady water temperature in the pool even on days when solar radiation is insufficient.
- **Flexibility and Automation:** Using smart controllers and automation systems, the system can automatically adjust its operation based on the availability of solar energy and the heating needs of the pool.
- **Increased Efficiency:** The combined use of solar panels and a heat pump can increase the overall efficiency of the heating system, allowing for the utilization of natural solar energy and the alternative use of the heat pump when needed.

Remote connection and monitoring of all pool functions

There are many benefits to using pool function connectivity products to link pool operations with the internet!



Peace of Mind: Benefit from the automated operation of the pump and water chemical balance systems. Stay informed of any issues promptly and protect your equipment from potentially costly damages.



Convenience: Easily monitor your equipment (circulation pump, heat pump, lighting, etc.) and take quick action from your mobile device.



Cost Savings: Optimize circulation time and chemical addition tailored to your pool's needs, saving on energy and chemical usage.



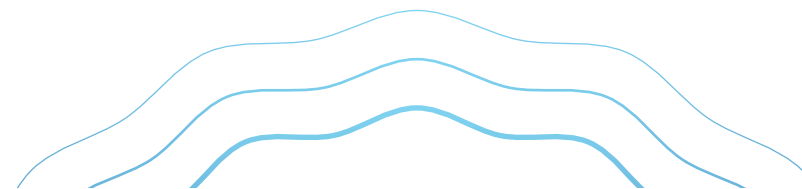
Monitoring: Ability to monitor your pool's operations remotely, even by an external service provider (Maintenance Company).



Simple and user - friendly, the MyINDYGO app makes pool management and maintenance easier.



Web access allows you to control through an internet browser, adjust parameters, and have a complete historical report.





The image displays three screenshots of the indygo web interface, illustrating its capabilities for monitoring and controlling an aquaculture system.

Top Screenshot (Dashboard): Shows a main overview with a temperature gauge at 27.8°C, a pH gauge at 7.2, and a salinity gauge at 506. It includes a navigation menu on the left and a top bar with system status (13 kWh, 7 minutes).

Middle Screenshot (Equipment View): Provides a detailed view of the system's components, including a lighting control panel with 'ON' and 'OFF' buttons, and a section for pumps (IR-PC1, IR-PC2) with their respective status and settings.

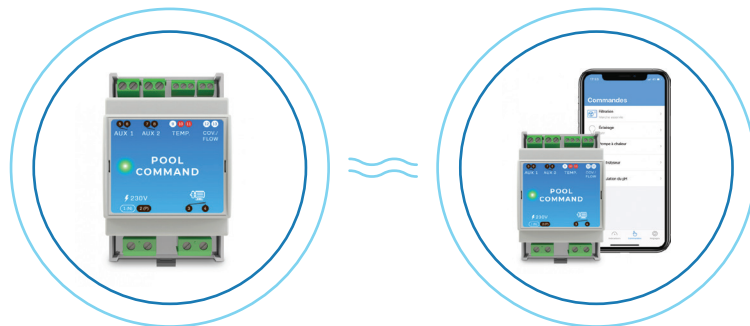
Bottom Screenshot (Control Panel): Focuses on the control of pumps and lighting. It features three columns for 'Pumps' (IR-PC1, IR-PC2), 'Lighting', and 'pH'. Each column has a 'Yeast' and 'Xenon' status indicator, a 'HELECTRONIC CONTROL' section with a 'ON' button, and an 'Electronics' section with a 'ON' button.

Wi-Fi equipment

1 Pool Command

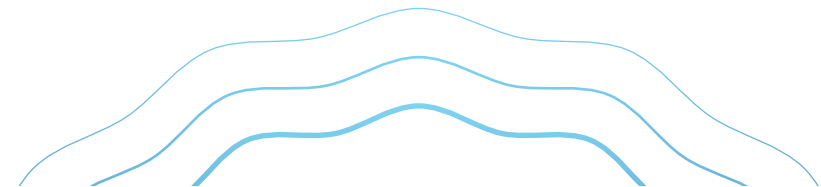
Smart and Connected Pool Timer, Local control with Bluetooth®, or Remote control with the wifi.

The Pool Command manages filtration times, controls pool lighting, and allows for remote programming and control of pool water treatment equipment such as the heat pump, salt chlorinator, hydraulic robot, and automatic cover. Ensuring that the pool remains a pleasure!



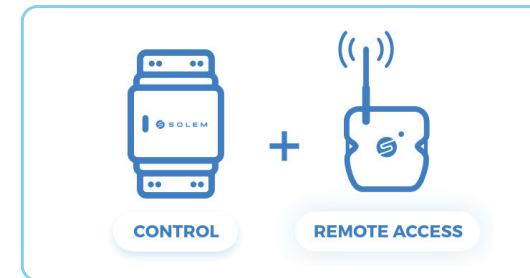
Features

- **Intelligent filtration control**
Set timer. There is also the capability to control a variable speed pump (inverter).
- **Automatic freeze protection**
When the temperature drops below 4° C the recirculation pump starts automatically.
- **Control / programming of 2 auxiliaries**
Lighting, heat pump, treatment, etc.
- **Cover position sensor**
Open - Close
- **Alerts with push & email notifications**
- **Advice**
For chemical treatment and water filtration.
- **Measurement history**
- **Water temperature analysis**



2 Lora | wifi Gateway

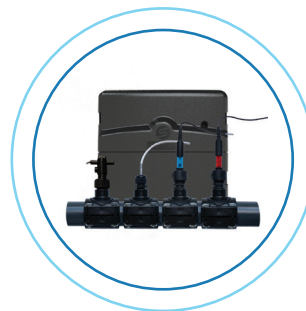
LR-MB-POOL module is a radio communication antenna that connects via Wi-Fi and allows up to 10 swimming pool modules (Pool Command, Pool Sense, Pool Guard etc.) to be connected to the Internet. This antenna communicates with the pool modules via a long-range radio link. It thus makes it possible to remotely control all the modules from the MYINDYGO apps.



3 Pool Guard

Indoor Connected Pool Analyzer. Installed in the technical room, Pool Guard watches over and monitors the quality of the water as well as the pressure of the filter (filter pressure analysis unit is required).

Equipped with analysis probes, it makes it possible to record all the water treatment parameters (pH, disinfectant, temperature, filtration times, pressure) and to configure alerts to be informed in real time of a drift in water treatment.



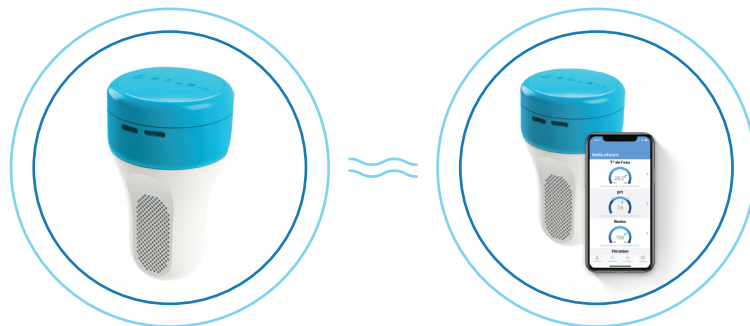
Features

- Ph analysis
- Filter pressure analysis
- Disinfectant analysis
- Alerts with push & email notifications
- Water temperature analysis
- Treatment & filtration advice
- Flow sensor
- Measurement history

4 Pool Sense

Floating connected pool water chemical balance data analyzer.

Pool Sense is a floating analyzer that installs in minutes directly in the pool and continuously analyzes the quality of the water. Pool Sense watches over the main water parameters (pH, disinfectant, temperature), warns you and advises you if necessary... for even more enjoy!



Features

- Ph analysis
- Alerts with push & email notifications
- Disinfectant analysis
- Treatment & filtration advice
- Water temperature analysis
- Measurement history



5 Filter Pressure Analysis Unit

The LR-PR unit continuously monitors the pressure of the pool filter and automatically alerts when the filter needs cleaning or in case of malfunction.

Battery operated, the sensor connects directly to the filter in place of the manometer. This unit requires the use of an LRMB-POOL antenna to communicate its data.



Equipment Protection

Benefits



Accurate Pressure Measurements

- Alerts with push & email notifications
- Measurement history
- Measurement/analysis of filter pressure
- Backwash notification
- Blocked flow notification
- Low pressure notification

Technical

Specifications

- Accuracy: +/- 30mbar
- Waterproof housing IP68
- Dimensions (LxHxW): 140mm/90mm/55mm
- Temperature: -10°C to 60°C
- 0-4 bar pressure sensor
- 1/4 and 1/8 pressure sensor connection
- Maximum pressure: 8 bar



Dive into *sustainable* pool solutions

As part of this pioneering initiative, we propose the installation of a small solar panel station next to your swimming pool.

These panels take advantage of solar energy and convert it into electricity, providing the necessary energy to run your pool.

This eco-friendly photovoltaic panel station is the ideal solution for those who wish to enjoy their pool in the most sustainable and ecological way possible.

In addition, with this pioneering initiative, you contribute to the reduction of the use of traditional energy sources and the reduction of CO2 emissions, strengthening our effort for a better environment.

With the photovoltaic panel station, you not only enjoy your pool, but also actively contribute to the protection of the environment. By choosing our company, you choose not only quality and innovation, but also demonstrate your commitment to a cleaner and more sustainable world.

≡ **The station**

will include:

- **Photovoltaic panels according to installed capacity of the pool**
- **Panel support base**
- **Inverter according to the installed capacity of the pool**
- **Automation for the management of the generated energy**
- **Battery energy storage (optional)**
- **Battery charger (optional)**





Informative Brochure

Eco Friendly Pool



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