

Main benefits of the Evaporative System

The new evaporative system offers several advantages. First, it ensures **greater air flow** to the condenser coils in both ON (closed pads) and OFF (open pads) modes. Second, it Simplifies **access and maintenance**. Lastly, it eliminates a significant amount of unnecessary material, resulting in a more **compact and efficient structure**. Overall, the system achieves greater total efficiency.

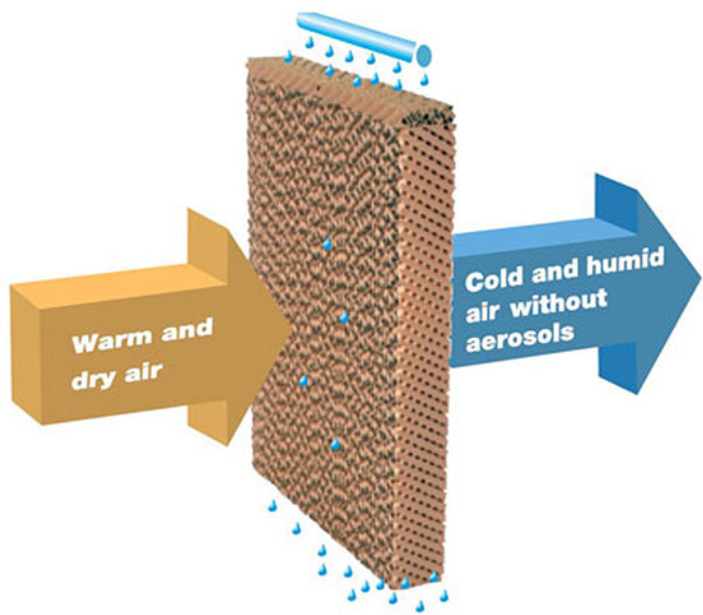
SMART SOLUTIONS	Enhanced heat exchange capacity
	Full connectivity
	Easy access and maintenance
	Dynamic pads
	High efficiency in all ambient conditions
NO BACTERIAL PROLIFERATION	Self-draining system
	No droplets in the airflow
	No water stagnation
DECREASED OPERATING COSTS	Water recycling system
	No need for water treatment
	Minimised energy consumption
REDUCED INSTALLATION COSTS	Suitable for truck transport
	Reduced weights and footprint



For contacts and information, please visit
www.geoclima.com

THE EVOLUTION OF ADIABATIC COOLING

Why choose adiabatic cooling



The adiabatic chiller by Geoclima features an innovative evaporative system that leverages dynamically the natural process of adiabatic cooling to achieve **significant energy savings**.

In the evaporative system, water is sprayed from a pipe positioned externally at the top of the condenser coils, wetting the pads: the hot and dry air withdrawn from the environment passes through the wet panels, cooling down in the process.

This cooling system lowers the condensing temperature, significantly reducing the compressor's pressure ratio and delivering substantial energy benefits.

The evaporation effect can lower air temperature by **up to 8 K**, enhancing condenser efficiency.

The evaporative system is particularly effective and efficient when ambient temperature is high and relative humidity is below 70%. During winter or in unfavourable conditions for the evaporative system, the **smart control moves the pads away** to allow greater air flow to the condensers, reducing fan energy consumption and ensuring maximum efficiency.

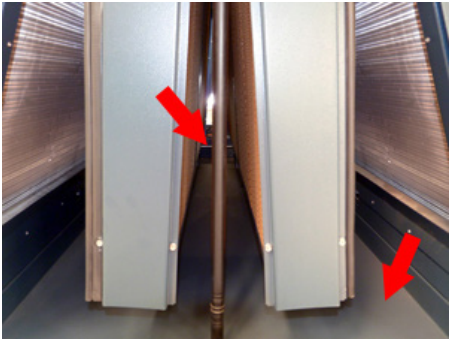
By employing this dynamic adiabatic system, Geoclima is able **reduce the annual electrical absorption** of the chiller by **up to 30%** compared to a conventional air-cooled system.

Additionally, we have developed a system to **recycle the water** used to wet the pads. The water passing through the pads is collected by a drainage system with gutters positioned under each pad, efficiently draining the water out. Instead of being wasted, as it usually happens, the water is recirculated in order to be reused by the chiller, providing further benefits in terms of energy **efficiency, cost savings, and eco-sustainability**.

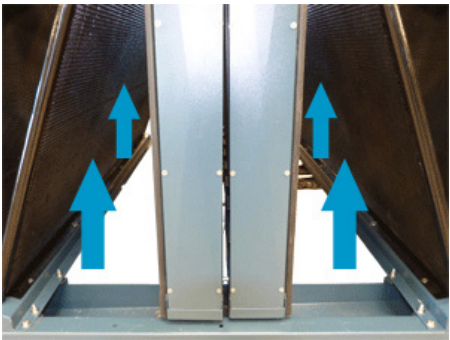
- REDUCED CONDENSING TEMPERATURE
- REDUCED COMPRESSOR PRESSURE RATIO
- AIR TEMPERATURE COOLS DOWN BY UP TO 8 K
- 30% ELECTRICAL ABSORPTION

The evolution of the Geoclima system

In its standard version, the adiabatic system is already an excellent solution, providing significant performance and energy savings. However, it has some limits that hamper its overall effectiveness and efficiency. For this reason, our R&D Department has developed innovative solutions to further enhance its operation and performance.



- Limits of the standard version**
1. The water collection tray hinders air flow from the bottom, reducing ventilation to the coils.
 2. The pads cannot fully open in OFF mode due to the water pipe positioned right between them, further obstructing airflow.



- The solutions provided by Geoclima**
1. The water collection tray has been replaced with a new draining system, featuring gutters placed under each pad to efficiently channel water out.

2. The water pipe has been positioned externally to the top of the condenser coils, allowing the pads to fully open and improve airflow.