

“*Energy optimisation and environmental protection thanks to the combination of CIAT's water chiller and Cristopia's STL latent heat storage system*”



CIAT'S THERMAL ENERGY STORAGE RANGE

Energy costs are on the rise, nations around the world are uniting to fight global warming, and standards are becoming increasingly stringent.

One of CIAT's most trusted brands of chillers is now available complete with the technology of **CRISTOPIA ENERGY SYSTEMS**, a leading name in thermal energy storage.

CIAT offers a system that is:

- complete,
- tailored to your needs,
- optimised,
- image enhancing.

It meets the many requirements and demands of users and operators.

Benefits of thermal energy storage

■ Higher energy efficiency

↘ A decrease in:

- The size of refrigeration units by 30-70%
- The quantity of refrigerant
- The size of peripheral units (cooling towers, etc.)
- Subscribed demand
- The size of equipment rooms
- Maintenance
- Running costs
- CO₂, SO₂ and NO_x emissions due to: kWh usage being shifted from daytime to nighttime (when plants are more energy efficient) and a flatter demand curve (beneficial for basic plants)

■ Cleaner environment

- Equipment replacement costs.

↗ An increase in:

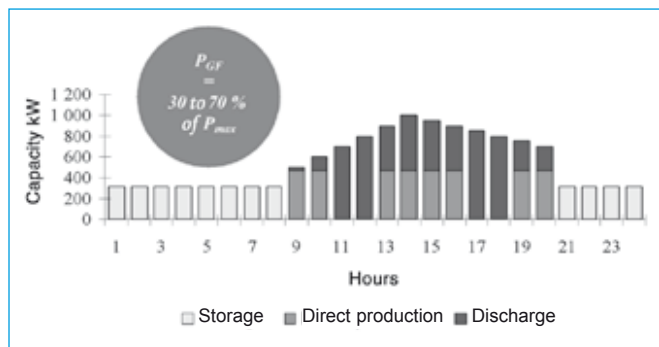
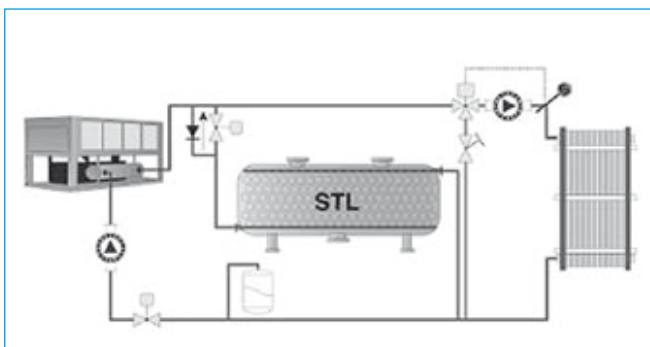
- Plant capacity
- Plant reliability and output
- Service life of units
- Energy efficiency

+ Additional benefits

- Backup system
- kWh usage can be shifted from peak hours to off-peak hours
- Energy savings
- Environmentally - friendly
- Better control of energy demand

SCHEMATIC DIAGRAM

Principle: diagram of a parallel system and peak shaving and demand limiting strategy



A thermal energy storage system can lower installed cooling capacity and electrical power by between 30 and 70%.

ADVANTAGES

■ Technological

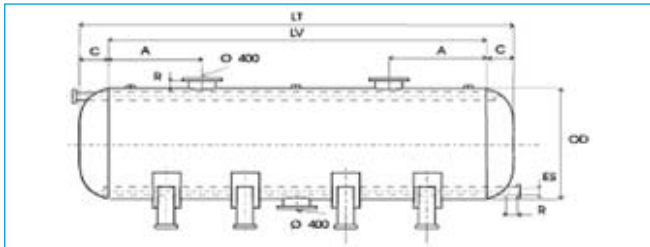
- Broad range of phase-change temperatures.
- High storage density (and vertical tanks may be used to save space).
- Tanks can be horizontal, vertical, buried or sunken to accommodate site conditions.
- Spherical nodules have a large exchange surface (0.6 m²/kWh); high charging and discharging capacity.
- Low pressure drops in system tanks (2.5 mWC).
- Unequalled reliability and service life: passed 10,000 test cycles (30-40 years of use) without interruption.
- The system itself requires little maintenance (coolant), while the nodules require none.

■ Engineering

- A team of engineers at your service
- Technical design assistance
- Can be tailored to any project
- Specially developed control and automatic operation capabilities
- Technical support during installation and commissioning
- System monitoring and optimisation possibilities
- Unique R&D expertise in thermal energy storage

A latent heat storage system is made up of two components:

A made-to-measure tank...



...and nodules

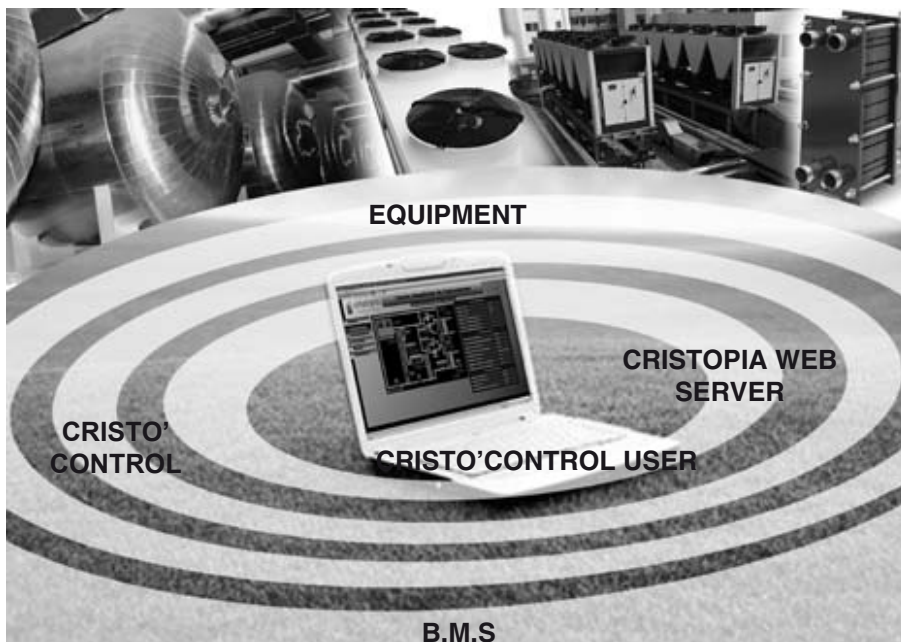


CRISTO'CONTROL

AN INDEPENDENT AND COMPLETE REMOTE MONITORING AND CONTROL SYSTEM

CRISTOPIA has developed a smart system to keep latent heat storage systems running at peak performance and extend their service life. Called **CRISTO'CONTROL**, it is the result of 20 years of know-how in thermal energy storage. It provides all the tools needed to control and monitor latent heat storage systems and perform preventive maintenance. Based on the latest control technologies, **CRISTO'CONTROL** is easy to use and helps you to achieve significant savings on running costs all year round. In just a few clicks of the mouse, and from any location, you can view and adjust your system to keep it running smoothly.

CONTROL YOUR INSTALLATION FROM ANYWHERE *



Monitor your system anywhere, anytime

With Cristo'Control, you can monitor your system wherever you are. To follow a live installation of a real system and learn more about the benefits and uses of **CRISTO'CONTROL**, visit www.cristocontrol.com.

* with the PREMIUM service contract.



→ Thermal energy storage

CRISTOPIA

This document is non-contractual. As part of its policy of continual product improvement, CIAT reserves the right to make any technical modification it feels appropriate without prior notification.

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