



ENERAMA
Environmental Technologies

DRAGON

**WORLD'S MOST
EFFICIENT & POWERFUL
CLIMATE CONTROL SYSTEM**



AGRICULTURE

The continuous transpiration occurring in controlled environment agriculture causes a constant pressure on the humidity levels. All the while the most important parameter of plant health and yield quality is balancing the humidity accumulated in the greenhouse or indoor farm.

Transpiration is the process of water evaporation from plant leaves. This process raises moisture and nutrients from the roots to the leaves, providing the necessary ingredients for photosynthesis and plant growth.

Plant's transpiration ability is directly correlated with the pressure on the surface area of its leaves. Therefore relative humidity plays a critical role in plant's ability to transpire as changes in relative humidity also change the pressure applied on the surface area of the leaves. Excessive relative humidity could drastically reduce plant transpiration which in turn will result in slowing down plant growth at first, followed by the plant getting diseases or infections.

In order to battle this considerable daily humidity load, operators of controlled environment agriculture have two typical approaches:

First approach requires to stop pursuing a controlled environment agriculture in a sealed model by relying on outdoor conditions to operate. This approach results in down-time during off seasons, unpredictable loss from outdoor weather conditions and contamination coming from outside.

The alternative approach on the other hand to date required considerable investments in mechanical equipment to bear significant operating expenses due to high energy consumptions.

Enerama has spent more than **3 year** in **R&D** stage between 2012-2014 specifically to solve this very issue foreseeing the need to unlock bottlenecks in agriculture to sustain the forecasts growth in population during the next couple of decades.



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PATENTED TECHNOLOGY



With its patented “**liquid desiccant**” system, Dragon is considered to be the most energy efficient climate control technology. Due to its unique and powerful dehumidification methodology, **Dragon** is able to ensure optimum climate conditions and superior air quality at a fraction of the energy consumption.

Dragon is able to absorb **1.32** Gallons of water while filtering the air from airborne pathogens by consuming **1 kWh** of energy. This leads to Dragon’s value proposition of improving revenues, decreasing operating expenses and enabling regulatory compliance.

ENERGY SAVING



From production to processing and storing, climate control has a considerable impact on the energy consumption of the operation. Relative humidity directly impacts the energy requirements to achieve desired temperature levels from heating or cooling. Plants transpiration of its daily irrigation water causes a constant humidity load in controlled environment agriculture.

Integrating automated Dragon Dehumidification technology into the HVAC strategy unlocks considerable energy savings. These savings are achieved from both the low energy footprint of the patented technology and its overall performance that leads to solve the common energy draining bottlenecks specific to this industry.

REMOTE MONITORING AND MANAGEMENT SYSTEM



Thanks to its robust service oriented architecture, Enerama's remote monitoring and management system called MekaSense is able to scale both vertically and horizontally. In other words MekaSense is able to integrate with an unlimited number of devices to read real-time data from in order to process it automated behavior all the while being able to add an unlimited number of equipments to control individually and in sync with an automated strategy. This powerful decision making engine is the core of Enerama's patented Dragon Dehumidification technology.

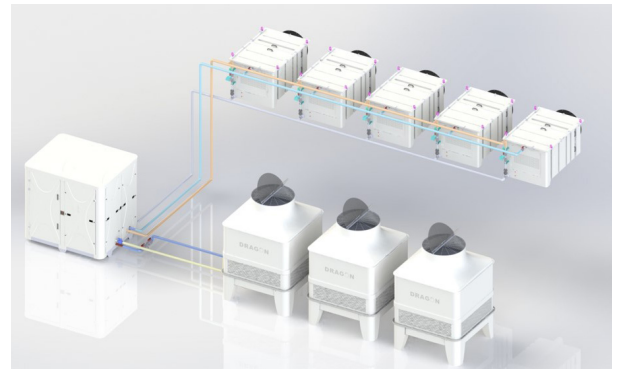


MODULAR & FLEXIBLE DESIGN



Dragon's patented closed circuit liquid desiccant dehumidification technology consists of scalable core components that comes in different variations in order to fit different facility design requirements.

The technology revolves around its core unit named Regenerators that are scalable to enable hourly water extraction from **26.4 gallons** to **158.5 gallons**. Moreover multiple regenerators can be installed in parallel to further scale the dehumidification capacity to any desired amount.



The other two core components of Dragons are the Regeneration Towers and the Conditioners. The Regeneration Towers are where the humidity extracted from the indoor environment is ejected from the closed circuit. The conditioners on the other hand is where the air brought into the closed liquid desiccant circuit in order to dehumidify, filter and condition the air to supply it into the indoor environment.

The conditioners have multiple options to accommodate both indoor and outdoor placements. In both approach ducts can be further integrated into the system for improved air circulation. Finally the outdoor units can also be utilized in order to plug into a central HVAC ducting system.

UNIQUE VALUE PROPOSITIONS



Revenue	Increase	High Quality Produce
		Healthy Produce
		Higher Yields
Operating Expenses	Decrease	Energy Consumption
		Chemical Filtration
		Labor
Facility Depreciation	Decrease	Mold and Rust from Humidity
Regulatory Compliance	Improvement	Reduction in Healthcode Violations
Risk Management	Improvement	Predictable Revenue Streams
		Automated Disaster Recovery

GENERAL FEATURES

- Consistently achieve optimum climate conditions to maximize product quality and to minimize product loss
- Unmatched energy consumption at 1.32 gallons per 1 kWh
- Consistent performance independent of most outdoor and indoor condition
- Considerable energy savings from the efficient use and transfer of latent energy
- No unwanted heat transfer during dehumidification
- Contributes dynamically to cooling or heating based on needs
- Prevent humidity driven biohazards including mold, fungi, bacteria and pests among many others
- Destroy considerable airborne pathogens during the liquid desiccant dehumidification
- Closed circuit liquid desiccant system with built in regenerative properties to eliminate running material costs
- Self diagnosis, remote support and in depth troubleshooting to streamline maintenance and to minimize downtime

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