



ENERAMA
Environmental Technologies

DRAGON
WORLD'S MOST
EFFICIENT & POWERFUL
CLIMATE CONTROL SYSTEM



LIVESTOCK

Temperature and humidity plays a critical role in establishing a (burasi underlined bir sekilde: Healthy and Comfortable Environment) in Livestock such as Poultry, Ovine and Cattle farming.

Most fattening animals cannot cool their bodies because they cannot sweat. They expel almost all excess heat through direct body surface - air contact, causing an increase in ambient temperature. Fattening animals also lower their body temperature by inhalation. However, as the ambient temperature increases, the efficiency of the cooling process decreases. Increase of body temperatures of animals causes them to consume less feed. This situation, results in the growth functions to decrease or stop. When the environment gets warmer than the animals can tolerate, the animals open their mouths and activate their auxiliary cooling systems. This cooling method works better if the air is partially dry. If the air contains a high amount of moisture, the excess heat in the animals' bodies cannot be discharged through the airways and lungs, and the evaporative cooling effect does not work well.

In addition to the unwanted temperature and humidity created by the feces of the animals, carbon dioxide and ammonia are also a major problem and must be removed from the environment. Air circulation provided by conventional ventilation systems cause fluctuations in the temperature of the environment, resulting in instability in animals' metabolism and in some cases can even lead to what is referred to as shock effect.

The dynamic requirements of livestock farming dictates an adaptive and efficient technology to meet the sector specific needs that has a substantial impact on the overall health and quality of the produce.



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NICHE SOLUTIONS FOR INDUSTRY SPECIFIC PROBLEMS



Maintaining humidity levels between **40% - 55%** at a temperature of **90 F°** in closed environments during fattening cycle allows an animal covered with hair or a chicken to feel the temperature around **80 F°**.

Animals can tolerate higher temperatures during the day if night temperatures are maintained at **57 F°**. In this way, animals start the next day well, which helps to keep their performance stable and reduce the healthcare risks that could be as severe as sudden death if daytime temperatures are too high.

Dragon dehumidification system maintains the ambient humidity and temperature within the ideal limits for night and day with its controlled air inlet and outlet only when necessary. Thanks to the automation system, the entrance of the air which carries unwanted bacteria is prevented by creating a positive pressure difference between poultry house and outside. In the meantime, collected air is supplied to the environment to be used as dehumidified, filtered, and disinfected in a desired ratio. As a result, it provides an ideal environment that is sterile, healthy and comfortable with considerable reduction in bacteria, odors and fungi.

The fresh, filtered and clean air supplied to the indoor environment reduces the need for ventilation. This will result in significant economic savings in heating and cooling costs, and in chemicals used to fight bacteria and fungi. On the other hand, young animals will be prevented from catching stress caused by temperature differences.

PATENTED TECHNOLOGY



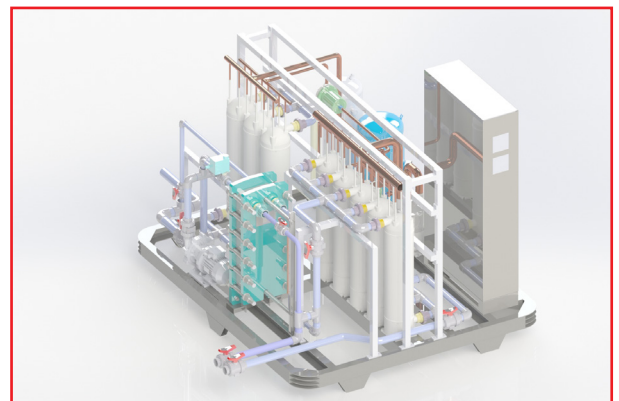
With its patented “**liquid desiccant**” system, Dragon is considered to be the most energy efficient climate control technology. Due to its unique and powerful dehumidification methodology, Dragon is able to ensure optimum climate conditions and superior air quality at a fraction of the energy consumption.

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. Moreover specific to frozen storage, excess relative humidity in the freezers (usually in the range of 30%-35%) could lead to icing.



Icing in turn would lead to reduction of performance at the expense of additional energy consumption and maintenance.

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 MekaSera is able to scale both vertically and horizontally. In other words MekaSera 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 equipment to control individually and in sync with an automated strategy.



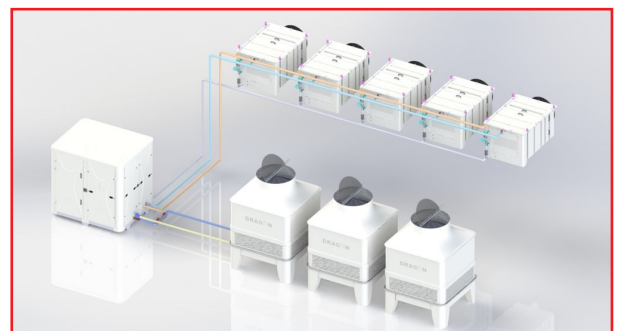
This powerful decision making engine is the core of Enerama's patented Dragon Dehumidification technology.

Automation and controls aside maintenance procedures are also performed remotely by Enerama Support Team utilizing the gateways to MekaSera embedded in the Dragon units. Client operations and management teams enjoy increased visibility and control through the remote monitoring and management features accessible from the mobile or web applications. Automated alarms and disaster recovery strategies allow effective risk management for critical components of the business.

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.



From outdoor placement and integration into central HVAC ducting system to stand alone high-ceiling units, the air handlers named Conditioners can accommodate any possible placement, configuration or integration requirements.

UNIQUE VALUE PROPOSITIONS



Revenue	Increase	Quality Product
		Healthy Product
		Reduced Product Loss
Operating Expenses	Decrease	Energy Consumption
		Chemical Filtration
		Labor
Facility Depreciation	Decrease	Reduced Mold and Rust
Regulatory Compliance	Improvement	Reduced Health code issues
Risk Management	Improvement	Predictable Revenue Streams
		Automated Disaster Recovery

GENERAL FEATURES



■	Unrivaled energy footprint of 1 kWh to extract 1.32 gallons
■	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 problems including mold, fungi, bacteria and pests among many others
■	Destroy considerable airborne pathogens during the liquid desiccant dehumidification
■	Closed circuit 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
■	User friendly interface to design and manage automation strategies
■	SMS alerts, Email notification and automated strategies for Alarms
■	Mobile and web application for remote management and monitoring

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