

 Eco Cool System

 Eco Cool Water



Alternative System for Cooling Tower Replacing
Ecologic, Safe and Efficient

 **Andely**
Industrial comfort



Dry Cooling System Vs Cooling Tower






The Cooling tower is a common water-cooling choice because it has a low purchasing cost among other cooling systems (Chillers – Dry Coolers), this savings are reflected only at the time at purchase.

After the first period of working with the Cooling Tower, the expenses related on having it on the “maximum efficiency” usage get noticeable, aside of this, it’s important to keep in mind the **water expenses related to evaporation.**

Using a conventional cooling system with Water Cooling Tower may have the following situations:

- Enormous water consumption compared to Dry Cooling Systems
- Contamination in the hydraulic circuit by scale (limestone), algae, muds, etc.
- Regularly water treatment of the Cooling Tower with chemicals
- Extraordinary Maintenance to the Cooling tower to replace parts
- Loss of efficiency to the equipment where the cooling tower is connected
- Risk of contamination by the Legionella.

COMPARISON TABLE	 COOLING TOWER	 Eco Cool System	 Eco Cool Water
Water Loos due Evaporation	30 ~40%	0%	5 ~10%*
Working at a temperature Lower than 32 °F	Problem of Freezing, is not possible to add Antifreeze glycol into the system	NO PROBLEMS, Antifreeze Glycol can be added into the system.	
Maintenance / Cleaning	At least 3-4 times per year	Once a Year	Two Time a Year
Water Treatment	CONTINUOUS	NOT REQUIRED	
Type of Circuit	Open Loop System	Closed Loop System	
System's temperature precision	Approximate and Variable depending on Climate Conditions	ABSOLUTE (Completely Independent From the Climate Conditions)	

* Depending From Set Point Temperature





Our Dry Cooler, Air/Water Exchangers, combined with an accumulation tank and controlled by a microprocessor conform the **ECO COOL SYSTEM**.

This new MODULAR cooling system for the industrial processing water is an innovative method to obtain a HUGE SAVINGS in the cooling of hydraulic oil circuits, chillers of condensed water, foundry water cooling, die casting, food industries, chemical factories or any other industrial process where water at room temperature is required.

The new technology implemented in the Dry Cooler construction, combined with a complete control device, results in an extremely reliable work cycle and enables a water temperature output of the Dry cooler near the inlet air temperature, even when the ambient temperature is very close to the temperature of the water to cool.

The advantage of this type of plant, cannot be reduced to the fact of saving power, but also a considerable saving of water, compared to Cooling Towers systems, because the fluid in the Dry Cooler is recirculated in a closed loop circuit, so that no evaporation or contamination (deposit of scale, algae, mud, acidic water) to cause corrosion in the pipeline that compose it. Another advantage of using the **ECO COOL SYSTEM** is that at temperatures below zero degrees a coolant can be added to the circulating liquid in the plant. In addition, this plant has a self-draining system and is equipped with high-efficiency fans. Also, in the construction of the exchanger, under thick copper pipe covered with aluminum fins is used, which gives the **ECO COOL SYSTEM** better performance compared to the conventional Dry Cooler in the market.



ECS-3V V Type System

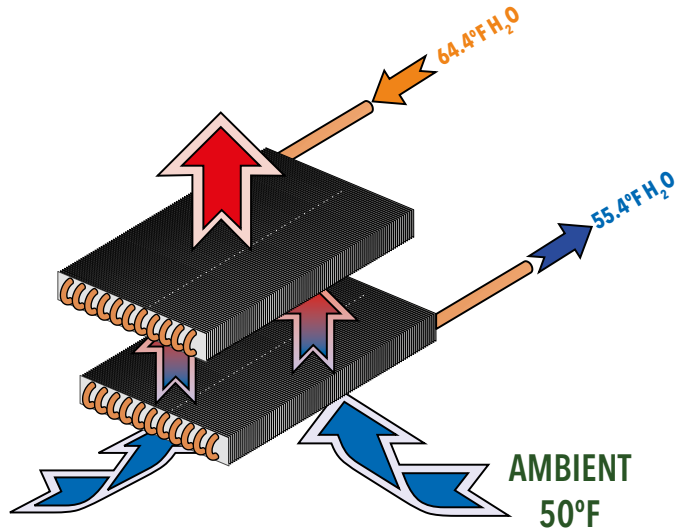


ECS-4V-DR Sandwich Type System



Eco Cool System

Dry Coolers Line



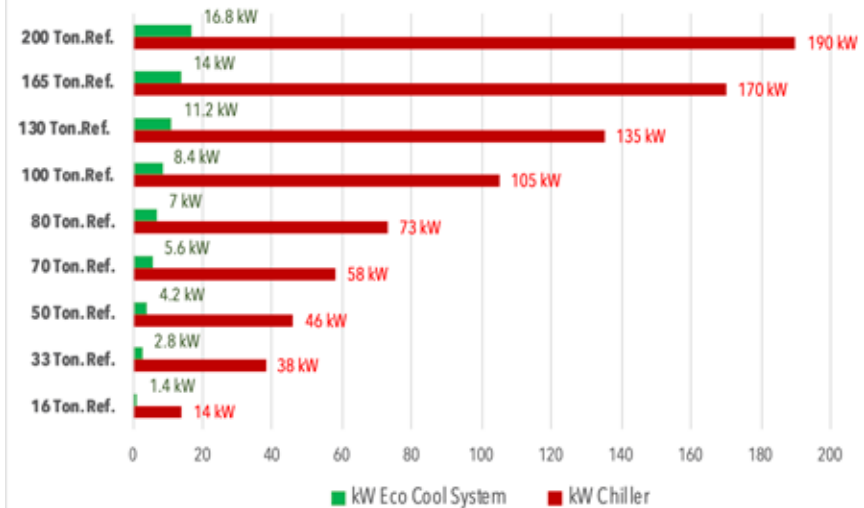
Using of high efficiency, pure copper radiators, the Dry Cooler **ECO COOL SYSTEM By ANDELY** can ensure a constant temperature + 3.6 / 5.4°F above ambient temperature, without the using water nebulization systems.

Besides, the **ECO COOL SYSTEM** is able to cool two separate circuits using the same cooler, which means using less space, thanks to the sandwich type (or V Type) finned panel, lower energy consumption and lower operating costs.

ECO COOL SYSTEM is suitable for Free Cooling Applications combined with Chiller, for high energy saving.



Energy Comparison use between Eco Cool System and Chiller





In climates where the temperature is unfavorable for the installation of an **ECO COOL SYSTEM**, alternative options are: (1) Cooling Towers, which have serious problems due to the large consumption of water with consequent scale and sludge deposits that require frequent cleaning or (2) Dry Cooler plants with auxiliary cooling systems with direct water nebulization in the radiator or adiabatic systems with evaporation panels, consequently with water waste.

To address these problems, **ANDELY** has developed **ECO COOL WATER** with the following advantages

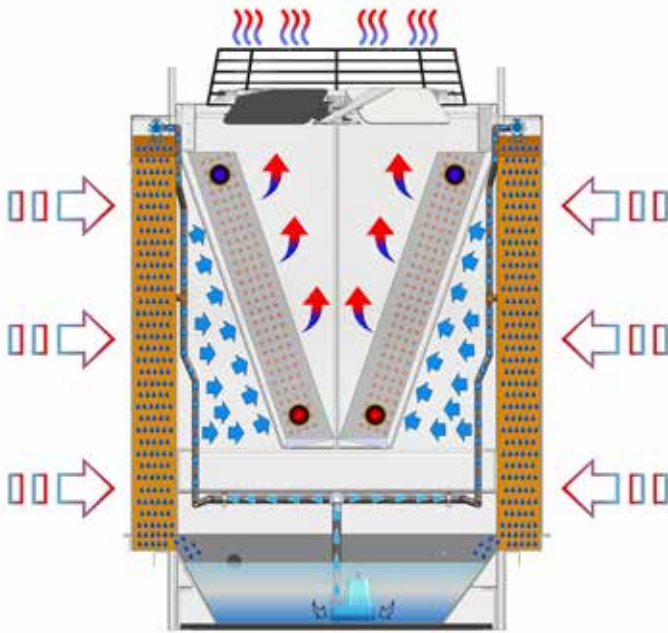
- **80% of WATER SAVING** compared to a Cooling Tower
- The average **water temperature of the system output is significantly below** compared to a traditional Dry Cooler System.
- **Precise temperature control** and consistent minimum water consumption to reach a value very close to the wet bulb temperature.
- **No contamination** of process water and no deposit of scale in the radiator.
- No water dispersion wetting floor, due to the fact that **excess water is recovered and is forwarded to a closed loop system.**



ECO COOL WATER uses large cellulose panels (30% more surface area) installed vertically are evenly and consistently wetted.

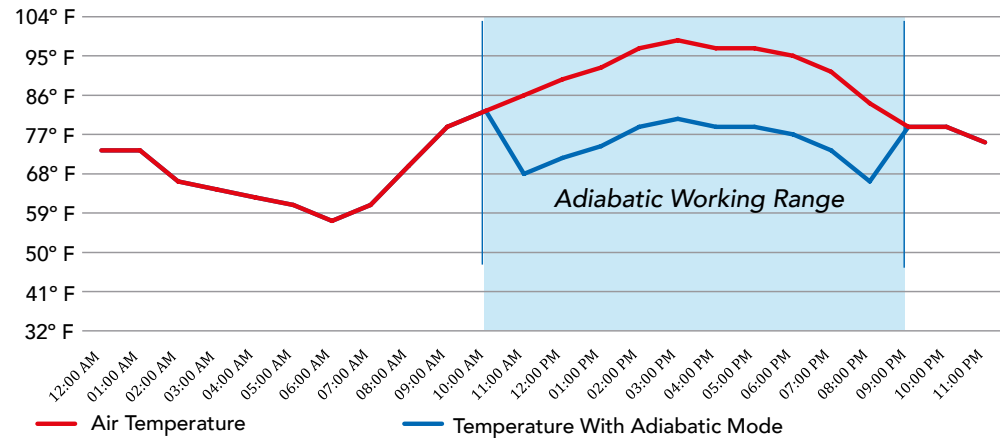
The cellulose panel is at the correct distance from the radiator. Moreover, the adiabatic panel functions as a filter purifying the air inlet and trapping the volatile parts which prevents contamination of the radiator.

After passing into the adiabatic panels, the air temperature significantly decreases, in some cases, up to 22°F below ambient temperature.



This is the key point in the efficiency of ECO COOL WATER system.

ADIABATIC - ECO COOL WATER - WORKING CHART





Wetting circuit cellulose panels are entirely constructed by non-ferrous material with tubs for collecting excess dampening water, **unique in its category with this feature, which allows high water savings**

The system has a recirculating filtering pump with automatic float and water flow regulator. It has an automatic float which marks the water level of evaporation



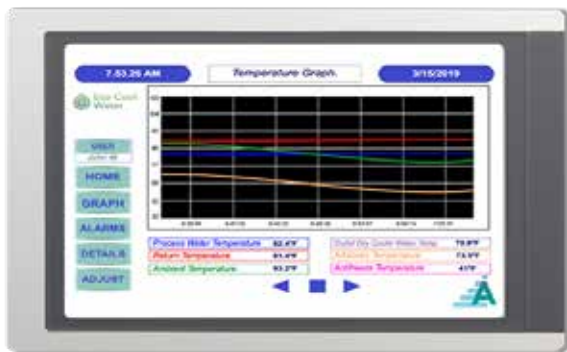
ECO COOL WATER is equipped with V-type radiators made of minimum thickness pure copper for an ideal exchange between water and air.

The aluminum fins have a **cataphoresis treatment (anti-corrosion)**, which ensures a long life even in contaminated environments or facilities in areas near the sea (salty air).

Besides, the special fin design forces the airflow to go slowly for a better exchange with the liquid flowing through the pipeline.

EC CONTROL is an electronic device that has a powerful microprocessor, it is easy to use, and is the brain of the installation because it guarantees a precise and constant temperature of the circulating water, in spite of the ambient temperature. It is only required to set some parameters and the system will automatically start working by comparing the data it receives from the thermocouples to the data entered by the operator.

This process optimizes the installation, starts the pump and regulates fan operation and speed needed. It also starts or completely stops the adiabatic system, ensuring maximum operating economy with high accuracy regardless the outside temperature. Using the touch screen panel, the PLC control optimizes the system and can show all data regarding ambient temperature and humidity (with Optional Humidity Probe).



Microprocessor Technical Data:

<ul style="list-style-type: none"> • 7" TFT LCD Touch Screen with 65536 colors 	<ul style="list-style-type: none"> • PID Temperature control with High Precision
<ul style="list-style-type: none"> • 800x480 WGA Resolution 	<ul style="list-style-type: none"> • Low Temperature alarm
<ul style="list-style-type: none"> • Protection Grade IP64 	<ul style="list-style-type: none"> • Anti-freezing alarm
<ul style="list-style-type: none"> • Communication Port Ethernet 	<ul style="list-style-type: none"> • Temperature Graph
<ul style="list-style-type: none"> • Modular Connection 	<ul style="list-style-type: none"> • Thermal Switch Control (Pump and Fans)
<ul style="list-style-type: none"> • Level control for the pumping tank 	<ul style="list-style-type: none"> • Global Management System
<ul style="list-style-type: none"> • Level control for the adiabatic tanks 	<ul style="list-style-type: none"> • Remote Access
<ul style="list-style-type: none"> • Level Access by Operator - User's - Administrator with password 	<ul style="list-style-type: none"> • Andely Connect System Ready





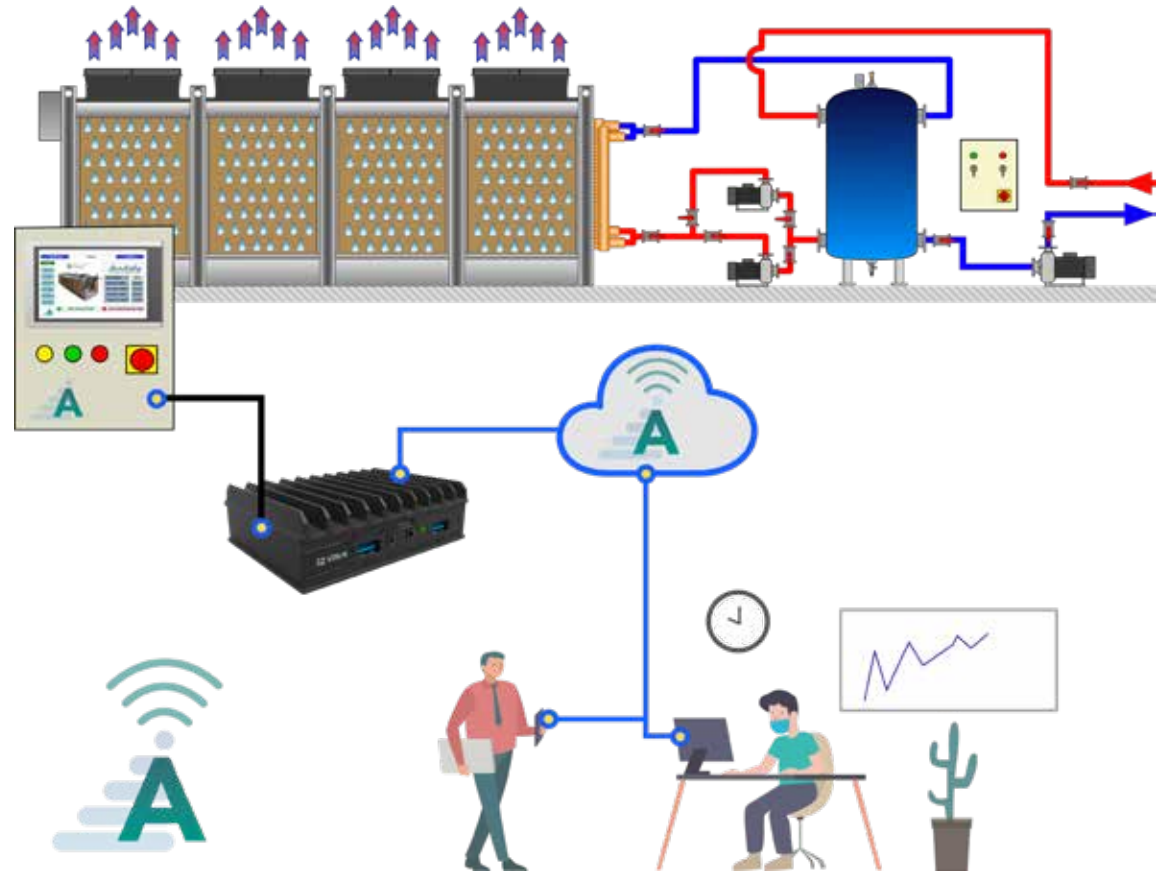
Andely **CONNECT**



Andely Connect provides a secure VPN connection to monitor your system without any port forwarding nor router configurations.

Andely Connect gives you endless possibilities on how you can manage the data coming from **EC Control**.

There is no limit on what you can do and create - charting, dashboards, automation, notifications, data analysis, machine intelligence, predictive maintenance, and much more.



**With Andely connect you can have everything under control in a simple way.
The easiest and quickest solution that gives you remote access to your Dry Cooler Control.**





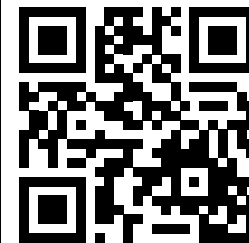
Represented By:
Capital Energy Equipment, Inc.
703-255-1259

 andely.us

 info@andely.us

 +1 346 355 6008

Tomball - 77375 - Texas



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