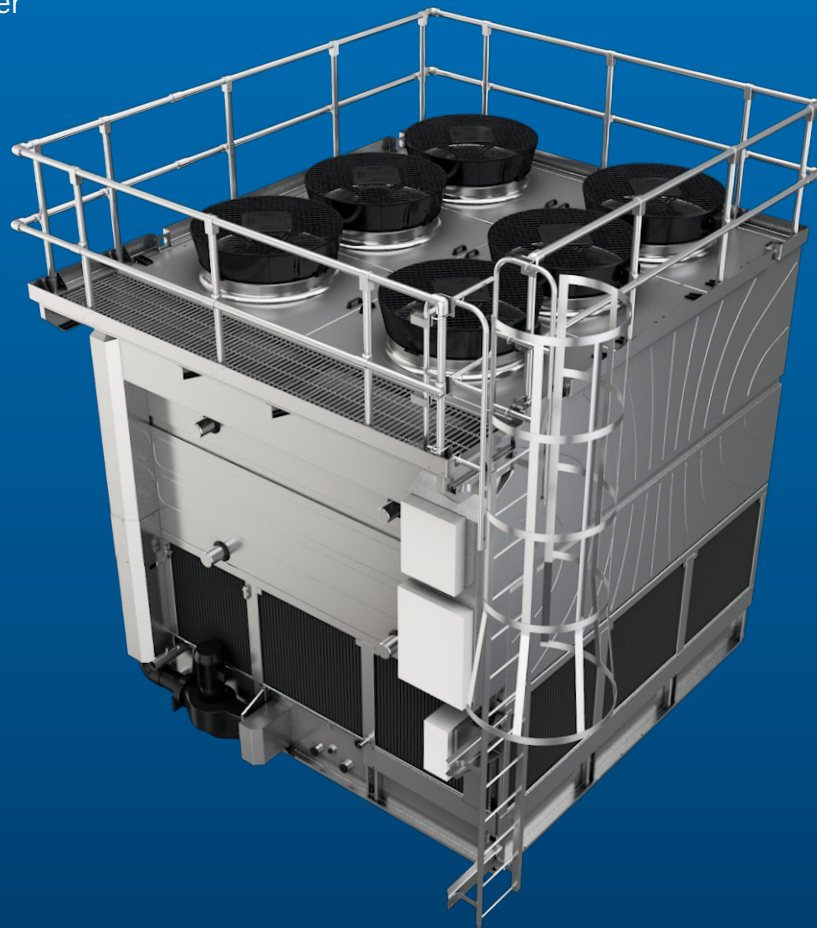


ECOSS

Stainless Steel
Evaporative Cooler



The New Choice In Evaporative Cooling





The New Choice In Evaporative Cooling

The Güntner ECOSS stainless steel evaporative cooler product line is proof of our ecological commitment to environmental and industry concerns that enables us to offer a product that will exceed the expectations of the facility owners, operators, and installers.

Galvanized coatings for evaporative coolers have been used in this industry since the 1950's. A lot has changed since the 1950's. More stringent environmental discharge concerns have led to the reduction or elimination of effective chemicals in both the galvanizing process and in water treatment programs. Facility owners need to consider water usage restrictions, source water quality, discharge permits, and which chemicals they are willing to allow at their prospective facility site prior to making any investment decision.

The ECOSS stainless steel evaporative cooler product line makes these decisions a lot easier. Stainless steel coils and casing do not leach zinc or lead into the water system, do not require costly and time consuming passivation treatments, and do not risk the occurrence of premature failure due to "white rust". They do offer superior corrosion resistance to reduce water and chemical usage, a reduced

propensity to scale on the smooth walled stainless steel, and a more forgiving material for long life even when faced with eventual water quality "upset conditions."

The benefits of the ECOSS stainless steel cooler are leveraged using the Güntner control technology which addresses the environmental and economic impacts of strained water resources. This eco-friendly control technology minimizes water treatment requirements and allows for operation at higher cycles of concentration, with reduced blowdown and lower make-up water requirements.

Güntner expertise in heat transfer design and stainless steel construction allows us to provide these benefits in a cost effective manner which boosts the return on investment for all-stainless construction to unprecedented levels. The total cost of ownership is reduced through long equipment life, low operating costs, low maintenance costs, and sustainable thermal performance, making the ECOSS stainless steel evaporative cooler the new choice in evaporative cooling.

Longer Product Life Has Arrived

The occurrence of corrosive damage to galvanized steel coolers has increased dramatically in recent decades. Chromates have been all but eliminated and zinc treatments are restricted in many locations today. White rust damage to evaporative coolers and more specifically galvanized steel cooler coils is almost 5 times more damaging than it was 15 years ago. Galvanized steel surfaces must be passivated at start-up and routine maintenance intervals, requiring valuable man hours and associated chemical costs. Improper or no passivation at start up can destroy a galvanized steel cooler within a year. By contrast, stainless steel coils and surfaces are self-passivating!

304L Stainless Steel Construction

- Stainless steel coil
- Stainless steel frame and covers
- Fully welded stainless steel basin

Longer Product Life

- Self passivating stainless steel provides a significantly longer product life than galvanized steel.
- Fans and drives are designed for evaporative service.
- EC fan models have stainless steel shafts and bearings.
- Survives water quality upset conditions

Capacity Range

- 175 to 625 TR in single unit
- Scalable frame design with dual and quad arrangements
- More than 45 unit variations available

Compact Design

- High power density through optimized water distribution
- 50% lower operating weight
- Reduced refrigerant charge
- Reduced expense for support structure



High Efficiency Fans

- AC or EC motor technology
- Low noise characteristics
- Multiple fan motors provide increased redundancy

Inlet Louvers

- Prevent water splash out
- Water tight, sight tight
- UV resistant
- Corrosion resistant

Assurances

- 5-year leak free warranty on coils
- 5-year leak free warranty on fully welded cold water basin
- Test facility per ASHRAE Standard 64

Certifications

- ASME "U" - stamp optional, per Section VIII, BPV Code
- CRN available upon request
- ISO-9001 quality assurance

Significantly Reduced Installation Labor

Factory wiring, plug-and-play control options, and designs for quick and trouble-free assembly of sections will reduce installation labor and site construction time. The upper and lower sections fit tightly together with an inter-locking structural design which ensures proper alignment and prevents water leakage at the field seams. The robust modular frame ensures the sections remain square during transportation and allow for trouble-free alignment during assembly, reducing man hours and access requirements associated with assembly. The integral positioning guide points and field seam design do not require drift pins or sealer tape for proper, quick, and watertight assembly.

Optimal Fan Solution

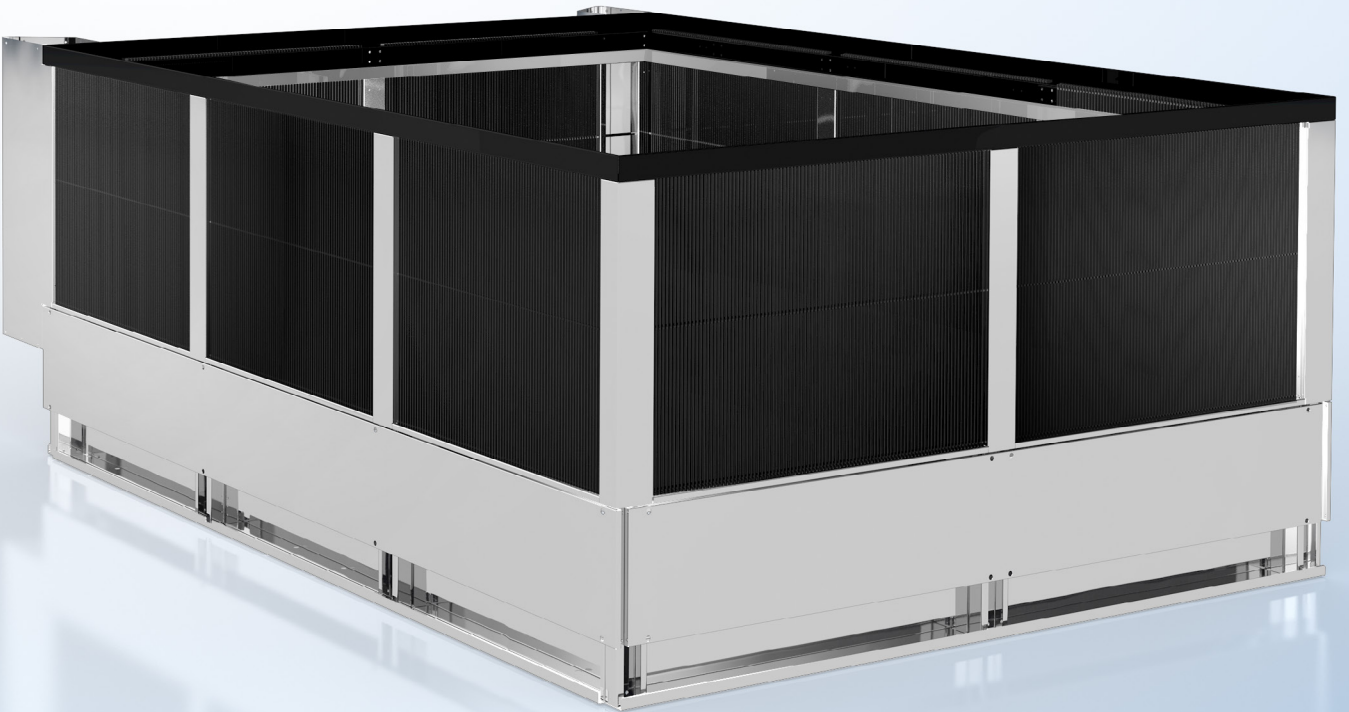
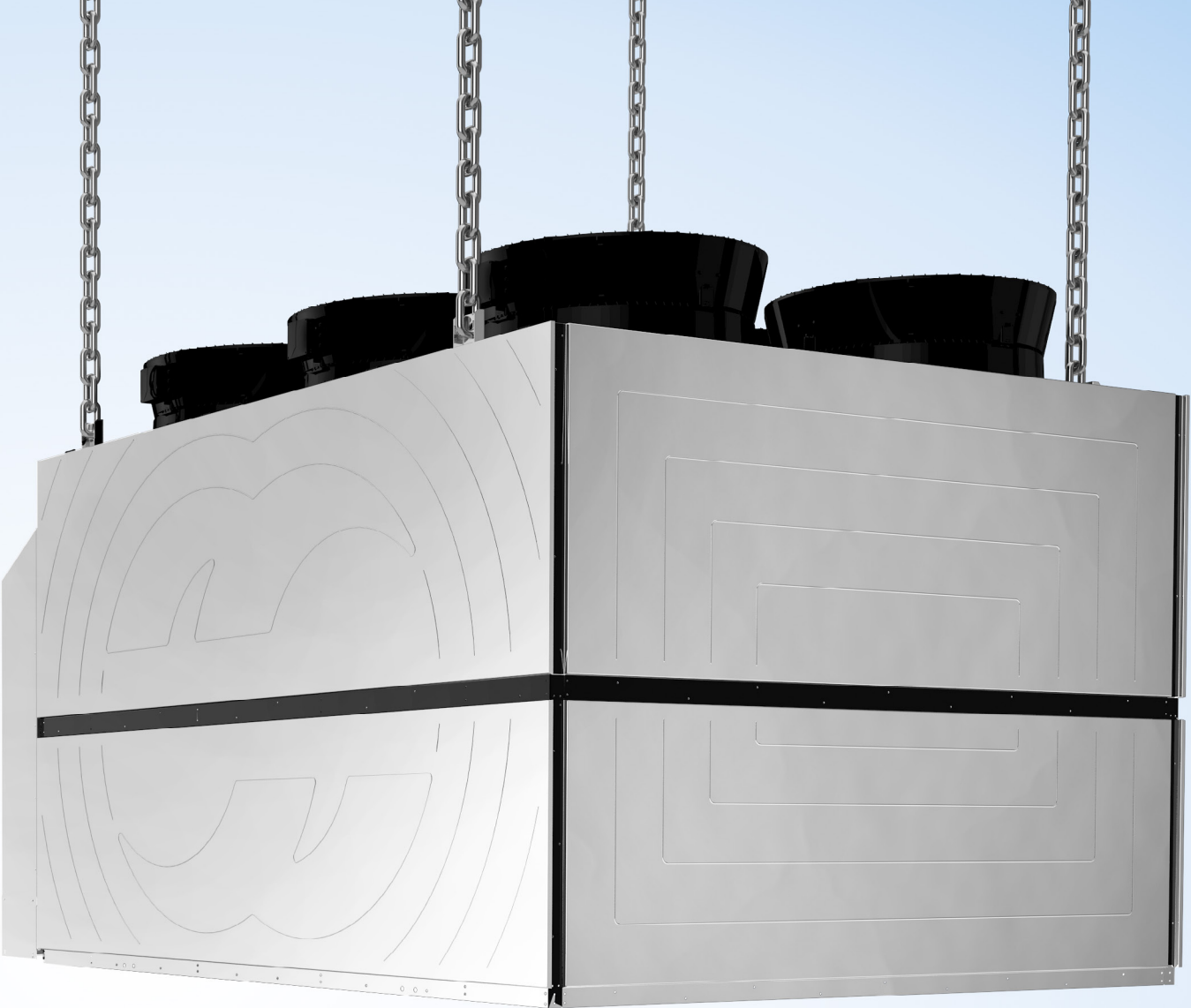
- Factory-wired, direct drive with AC or EC fan motors
- No belts to adjust or replace
- No bearings to grease or replace
- Fan motors wired to a common junction box (power and control)

Simplified Rigging

- Quick and easy assembly of sections
- Rigid sections retain squareness
- Integral positioning guides to place top section
- 4-point bolting located inside unit
- Requires no sealer tape, no tappers
- 50% lower rigging weight versus conventional designs

Plug-and-Play Controls Option

- Integral motor management and capacity control
- Integral hydro management
- No additional software required
- No shielded cables required
- No line filters



At A Glance

	8.5' x 12'	10' x 12'	12' x 12'	10' x 18'	12' x 18'
Capacity Range in TR	180 - 278	212 - 328	304 - 414	288 - 475	456 - 633
Refrigerant	R717, R22, R134a, R507, R404A				
Range of Condensing Temp.	60° F - 110° F				
Range of Wet Bulb Temp.	50° F - 86° F				
Coil Material (Tubes, bends, headers, connection)	304L Stainless Steel				
Applicable Standards	ASME B31.5, ISO 9001				
Base Footprint (L x W x H (Ft.))	11'11-3/4" x 8'5-1/2" x 13'2-1/2"	11'11-3/4" x 9'9-3/4" x 13'10-3/4"	11'11-3/4" x 11'10" x 13'10-3/4"	18'4" x 9'9-3/4" x 14'10-3/4"	18'4" x 11'10" x 14'10-3/4"
Shipping Weight (lbs.)	6,736 - 9,318	7,925 - 10,962	9,974 - 12,680	12,739 - 17,135	15,504 - 19,536

Lower Operational Cost

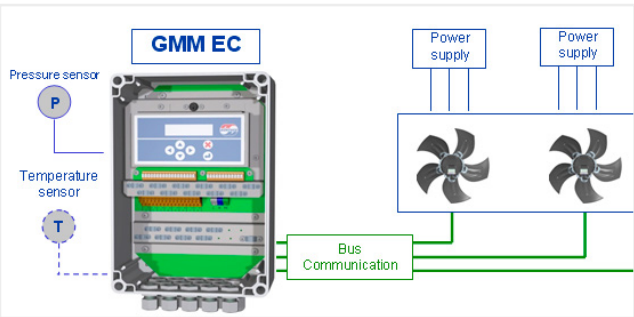
Competence for unique system solutions

Premium materials and components provide a platform to reduce operating costs by reducing energy consumption, reducing water usage, and reducing water treatment costs.



Energy Savings

- High-efficiency, direct drive fan systems
- EC fan technology alternatives to further reduce power consumption



Intelligent Control System

- Güntner Motor Management (GMM) with EC fans
- Güntner Hydro Management (GHM)
- Messages and warnings are shown on controller display
- Selective fan shutdown
- Easy integration into customers system
- Record of all energy data



Water Savings

- Greater corrosion resistance can permit higher cycles of concentration and reduce water usage



Less Chemical Usage

- Stainless construction eliminates passivation treatment costs and delays associated with galvanized steel
- Greater corrosion resistance can reduce water and chemical usage, permit higher cycles of concentration

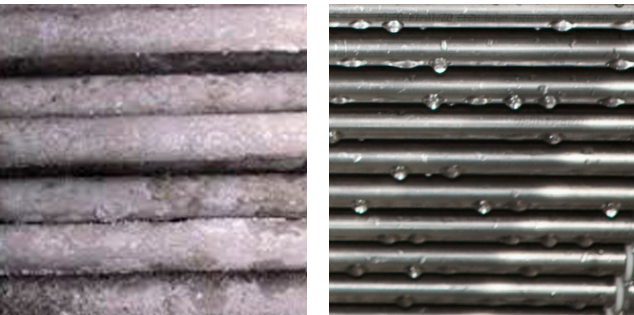
Lower Maintenance Cost

High operational reliability

Hinged fan nozzles, a service walkway located within the fan deck compartment, optimized perimeter access and a stepped basin design located on the side of the unit are just some of the features which make the Güntner ECOSS evaporative cooler a preference to service and or maintain.

Self Passivation

- Stainless steel is self-passivating in normal service.
- No need for start-up passivation
- No ongoing monitoring and no periodic passivation



Easy Access

- Hinged fan panels for access to drift eliminators and spray nozzles
- Walkway beneath fan guards
- Vertical alignment inlet louvers for easy access to basin



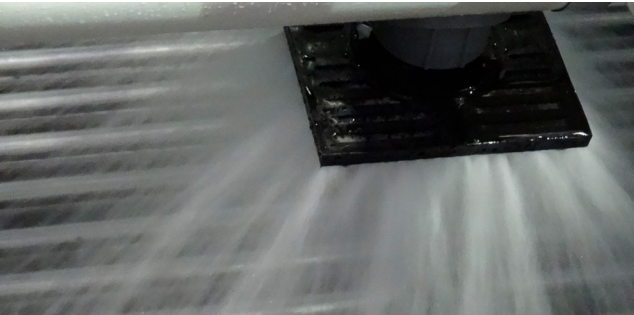
Direct Drive EC Motors

- Eliminate all routine maintenance
- NO belt adjustments or replacements
- NO belt sheaves to align or replace
- NO greasing of bearings or replacement of bearings
- NO replacement of drive shafts



Reliable Water Spray System

- Removable spray nozzles
- Large orificed nozzles prevent clogging
- Riser pipe from pump positioned to prevent breakage
- Stainless steel strainer
- Fully drainable basin



EC Motors - Technology of the Future!

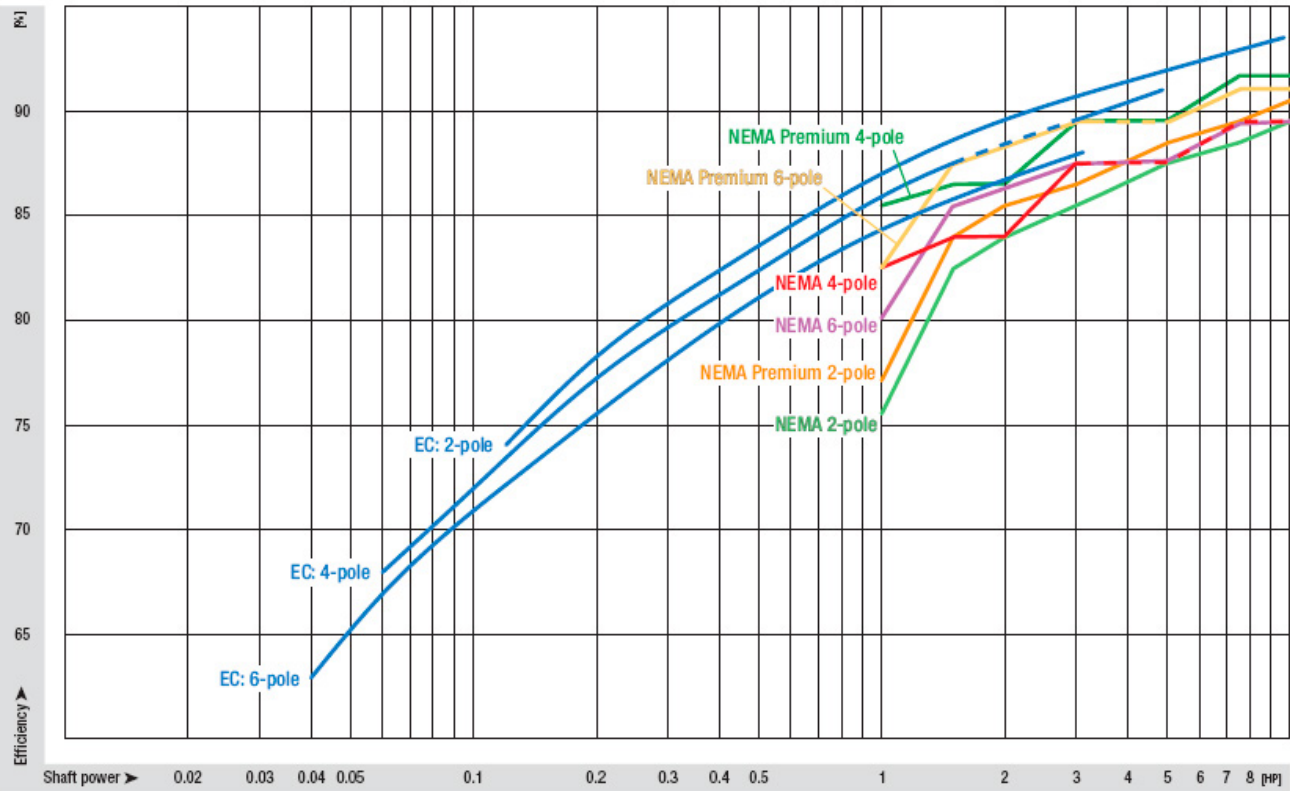
Use of EC and AC fans

Compared to conventional systems, it is possible to save energy by using EC fans with the Guntner Motor Management (GMM). EC motors are equipped with optimized power electronics, especially developed and designed for these motors. Compared to AC motors, the motors of EC fans have no winding in the rotor, but a permanent magnet instead. Due to this fact, there are no induction losses or slip losses in the rotor. Especially for speed controlled applications, the EC technology offers a larger variety of benefits like Low Capacity Motor Management, automatic parameterization, function and selective fan shutdown. ECOSSE is equipped with high efficiency, direct drive axial fans. Motor, impeller, nozzle and protection guard form an entity with optimal airflow and sound insulation characteristics. The parameters of the EC fans are set at factory, so that they are ready for operation.

EC vs. NEMA efficiency comparisons

EC Motors with integrated electronics compared to NEMA motors without speed controller

Shaft output power versus nominal efficiency

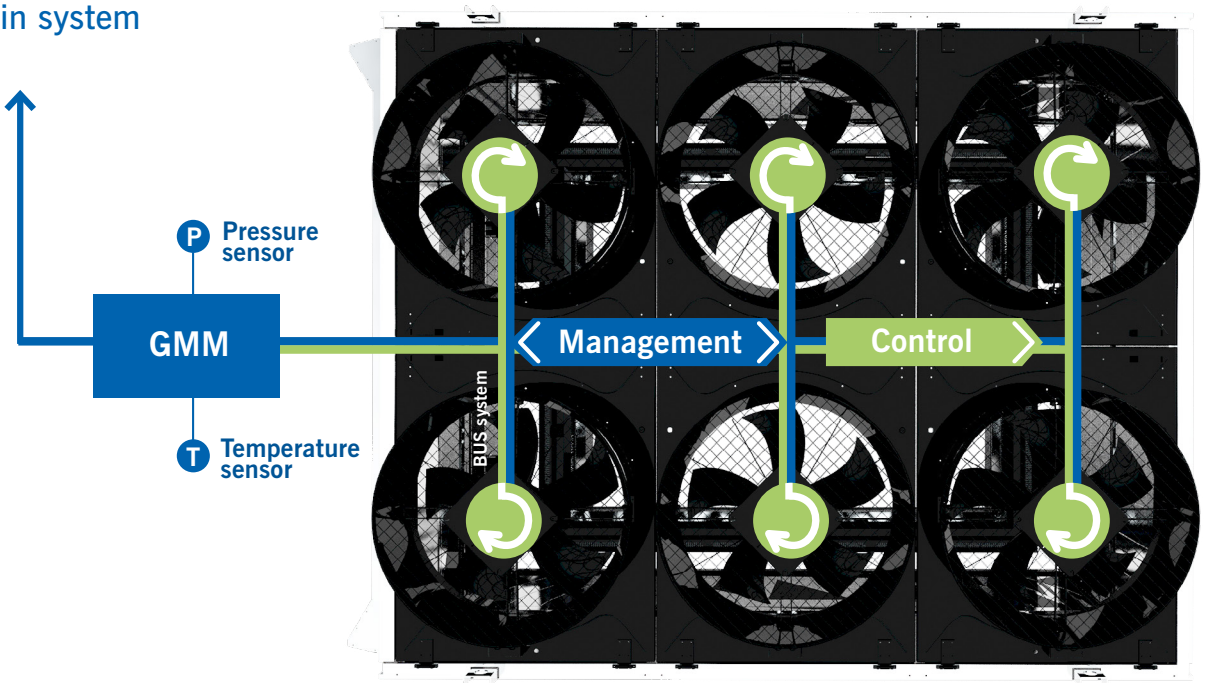


[When a VFD is applied to a NEMA motor these efficiencies will be considerably reduced] Source: ebm papst

EC Motors + GMM = Optimized Energy Efficiency

The Guntner Controls division developed the Guntner Motor Management system GMM especially for EC fans. Only the combination EC fan with GMM creates an intelligent control system to optimize energy usage. Factory wiring of the motors and GMM will significantly reduce installation costs and timing. With the optional bus interface, main systems can be integrated (e.g. energy management, remote maintenance, etc.).

Communication to main system



Would you like to know more about the Guntner Motor Management? Ask for our GMM brochure!

GHM + GMM = Overall Optimized Efficiency!

The Guntner Hydro Management system (GHM) was developed by the Guntner controls division to be integrated into the full system with the GMM. Both controllers work together in managing the air side and water side. The GHM can manage the pump control, biocide injections and conductivity to maintain proper water quality, heating of the water for cold climates, and basin water levels. The combined control from the GHM and GMM allows for optimum efficiency of the entire system.

Operation at Higher Cycles of Concentration

The Güntner ECOSS evaporative cooler with stainless steel coil, frame, basin and cabinet, allows for operation at higher cycles of concentration when compared to a galvanized coil and casing construction, which means less overall water consumption and chemical treatment and an extreme reduction in scaling and / or corrosion.

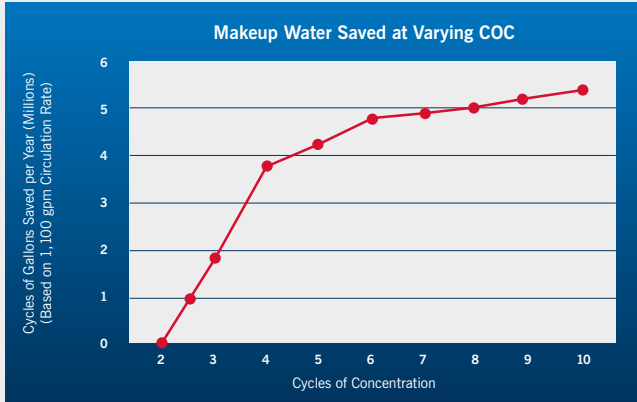
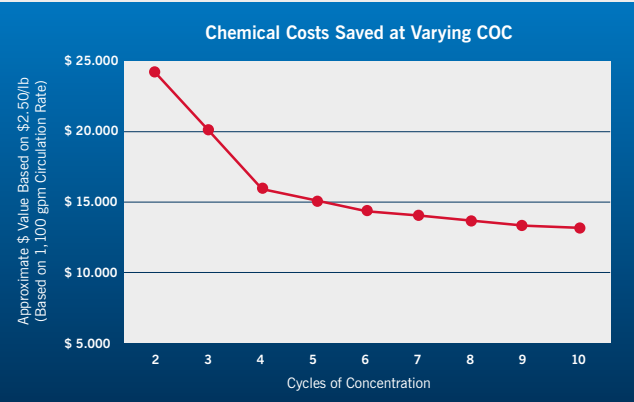


Performance Reliability

To ensure evaporative cooling performance our heat rejection ratings are based on verified lab test data. Our state of the art environmental test chamber is fully equipped with modern computerized and automated data acquisition systems and is built according to ASHRAE Standard 64, Methods of Laboratory Testing Remote Mechanical-Draft Evaporative Refrigerant Condensers.

Thermal performance ratings are based on test evaluations per CTI ATC-106, Acceptance Test Code for Mechanical Draft Evaporative Vapor Condensers and CTI ATC-105, Acceptance Test Code for Closed Circuit Cooling Towers. Verifying performance and accuracy of equipment ratings are a cornerstone to delivering maximum system efficiency.

Increasing COC Can Reduce Chemical and Water Usage.



Utilizing components with greater corrosion resistance can permit operation at higher cycles of concentration which can significantly reduce water usage, water blowdown, and chemical usage.



Proven Field Experience

ECOSS has met the challenges of poor water quality, passivation, scale, and corrosion head-on with a 100% success rate. In many of our Brazilian installations there are no anti-scale or anti-corrosion water treatment services provided. This is firsthand knowledge as we have visited hundreds of units in operation to assure the owner is experiencing the benefits of ECOSS.



Global Presence

Being your partner, we are committed to offering you global support. We speak the language of your market and understand your local requirements and regulations.



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