evapco for LIFE

INDUSTRIAL REFRIGERATION CONDENSERS

GLOBAL COLD CHAIN ALLIANCE®

Member of iiar International Institute of Ammonia Refrigeration www.iiar.org

IARW International Association of Refrigerated Warehouses

AHRI Air-Conditioning, Heating, and Refrigeration Institute

TOTAL CONDENSER PRODUCT OVERVIEW

Evaporative, Hybrid, Adiabatic & Dry

EVAPCO Global Headquarters, Taneytown, Maryland USA

Get to Know EVAPCO

Since its founding in 1976, EVAPCO, Incorporated has become an industry leader in the engineering and manufacturing of quality heat transfer products around the world. EVAPCO's mission is to provide first class service and quality products for the following markets:

- **Industrial Refrigeration**
- Commercial HVAC
- Industrial Process
- Data Center
- Power

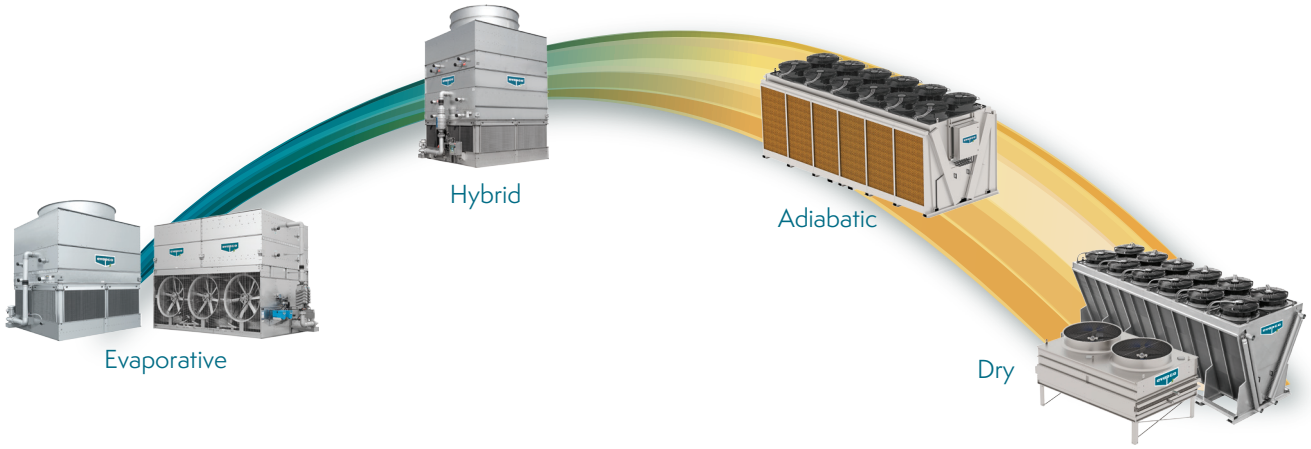
These quality products for the industrial refrigeration market include: refrigerant condensers, cooling towers, evaporative condensers, evaporators, hygienic air handlers, packaged low charge ammonia systems, packaged Transcritical CO_2 rack systems, pressure vessels and packages, waters systems and controls and automation.

The EVAPCO Wilson E. Bradley Research & Development Center

Featuring a state-of-the-art, low-temperature, insulated environmental test chamber and a fully functional ammonia refrigeration system designed to operate at suction temperatures as low as 51.1°C (-60°F), the EVAPCO Research & Development Center enables us to find groundbreaking solutions for the industry's biggest challenges. The newest addition to EVAPCO's R&D center is a CO_2 testing lab.

Full Spectrum Global Solutions

EVAPCO offers the full spectrum of condenser solutions from fully evaporative to fully dry.



EVAPCO's wide array of industrial refrigeration condenser products ensure we have the optimum solution to meet all applications. EVAPCO condensers can be selected to reduce energy consumption, minimize or eliminate water usage, or a combination of the two. Utilizing EVAPCO's Spectrum™ selection software, the optimum condenser can be selected to meet the design goals of any project. Contact your local EVAPCO Representative for assistance in selecting the unit that best fits your application.

Smart Shield® Solid Chemistry Water Treatment System

EVAPCO's Smart Shield® solid chemistry water treatment system is an innovative solution to conventional liquid chemical programs. Smart Shield® was developed specifically for evaporative condensers and closed circuit coolers. The system comes factory mounted and includes all the components required for an effective water treatment system. Solid products eliminate the potential for liquid spills making it easier and safer to use. Controlled release chemistry provides uniform treatment over a 30 day period.

ATC-E

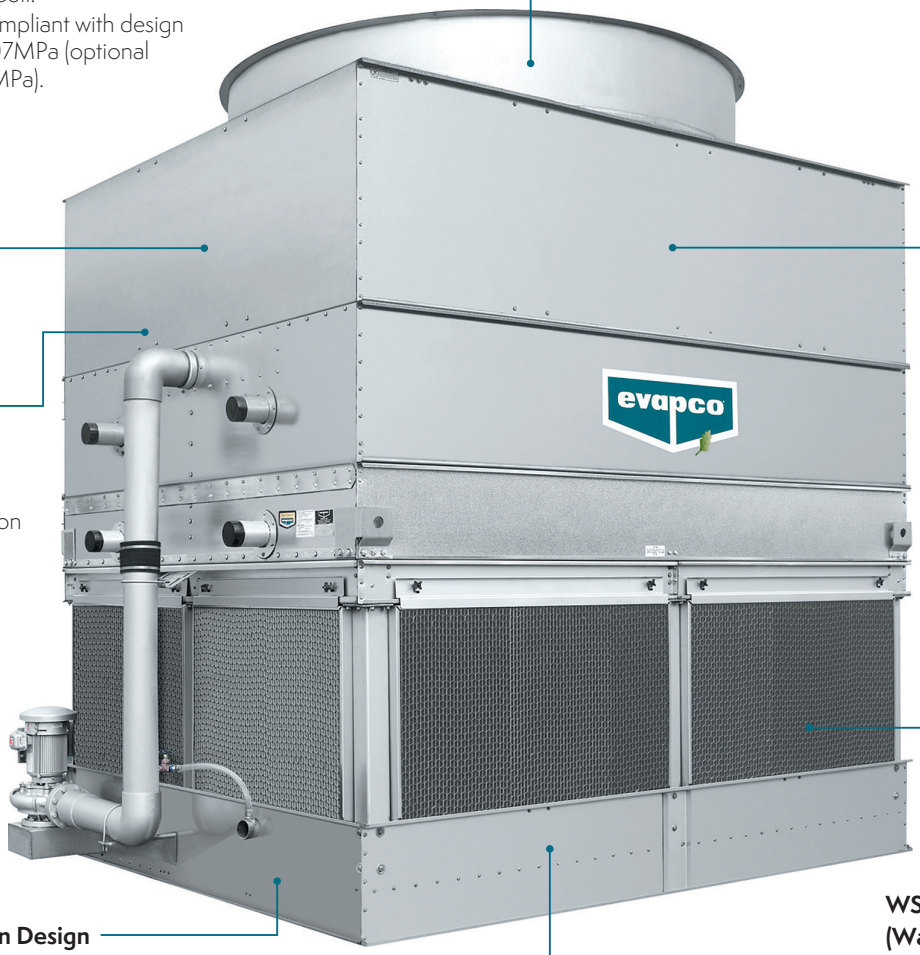
The industry's original induced draft condenser, providing high efficiency with unparalleled flexibility for your layout requirements.

Thermal-Pak® II Heat Transfer Technology

- High heat transfer efficiency due to tube geometry and orientation.
- Lower refrigerant charge.
- Optional TITAN 304L or 316L Stainless Steel Coil.
- ASME B31.5 compliant with design of 300psig/2.07MPa (optional 400psig/2.76MPa).

Fan Options

- Aluminum Low-Sound Fan.
- Wide Cord Super Low Sound Fan.
- Up to 15 dB(A) sound reduction @ 50ft (15m).



Drive System

- Totally Enclosed Fan Motors assures Long Life.
- Power-Band Belts for Better Lateral Rigidity.
- Non-corroding Cast Aluminum Sheaves.
- Heavy-Duty Fan Shaft Bearings with L-10 Life of 100,000 hrs.
- All Other Components are of Corrosion Resistant Materials.

Water Saver Drift Eliminators

- Reduce drift rate to 0.001%.
- Made from corrosion resistant PVC for long life.

"Clean Pan" Basin Design

- Access from all four sides.
- Large open area simplifies maintenance.
- Basin may be inspected with pumps running.
- Sloped basin design prevents sediment buildup, biological film and standing water.

General Construction

- G-235 Mill Hot-Dip Galvanized Steel Panel Construction as standard.
- Available in both 304 and 316 Stainless Steel Panel Construction.

WST Air Inlet Louvers (Water and Sight Tight)

- Easily removable for access.
- Design keeps sunlight out – preventing biological growth.
- Keeps water in while keeping dirt and debris out.

The **ATC-E** line of induced draft evaporative condensers reflects EVAPCO's continuing commitment to research and development. The advanced design provides owners with many operational and performance advantages. The owner-oriented features of the ATC-E, along with the independent certification of IBC compliance, reinforce the ATC's position as the premier induced draft evaporative condenser for the industrial refrigeration industry. The ATC-E condenser is available in box sizes ranging from 4' x 6' (1.2m x 1.8m) to 24' x 40' (7.3m x 12.2m) and capacities from 35 to 2,637 Ammonia Tons.

eco-ATC-A

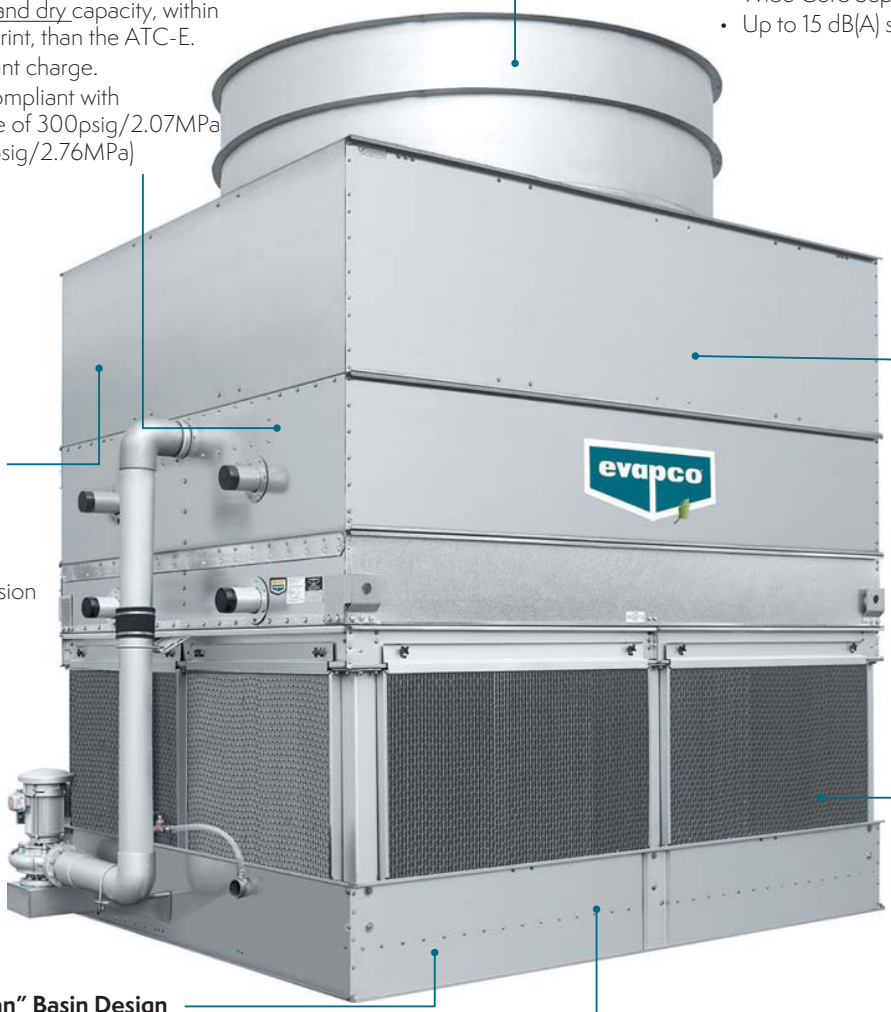
All the benefits of the ATC-E but with increased wet capacity and much improved dry capacity thanks to EVAPCO's Ellipti–*fin*® extended surface heat transfer coil, resulting in energy and water savings.

Ellipti-*fin*® Heat Transfer Technology

- Extended surface fins on all rows to maximize surface area.
- Improved wet and dry capacity, within the same footprint, than the ATC-E.
- Lower refrigerant charge.
- ASME B31.5 compliant with design pressure of 300psig/2.07MPa (optional 400psig/2.76MPa)

Fan Options

- Aluminum Low-Sound Fan.
- Wide Cord Super Low Sound Fan.
- Up to 15 dB(A) sound reduction @ 50ft (15m).



Drive System

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- Heavy-Duty Fan Shaft Bearings with L-10 Life of 100,000 hrs.
- All Other Components are of Corrosion Resistant Materials.

Water Saver Drift Eliminators

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WST Air Inlet Louvers (Water and Sight Tight)

- Easily removable for access.
- Design keeps sunlight out – preventing biological growth.
- Keeps water in while keeping dirt and debris out.

The **eco-ATC-A** line of induced draft evaporative condensers includes many of the advanced ATC-E features while utilizing the Ellipti–*fin*® extended service heat transfer coil. The eco-ATC-A offers improved heat transfer during wet operation and offers significant water savings due to extended periods of dry operation. With high dry bulb switchover temperatures, dry operation near or above freezing are easily accomplished making it an ideal solution for cold climates. The eco-ATC-A condenser is available in box sizes ranging from 4' x 6' (1.2m x 1.8m) to 24' x 40' (7.3m x 12.2m) and capacities from 87 to 2,728 Ammonia Tons.

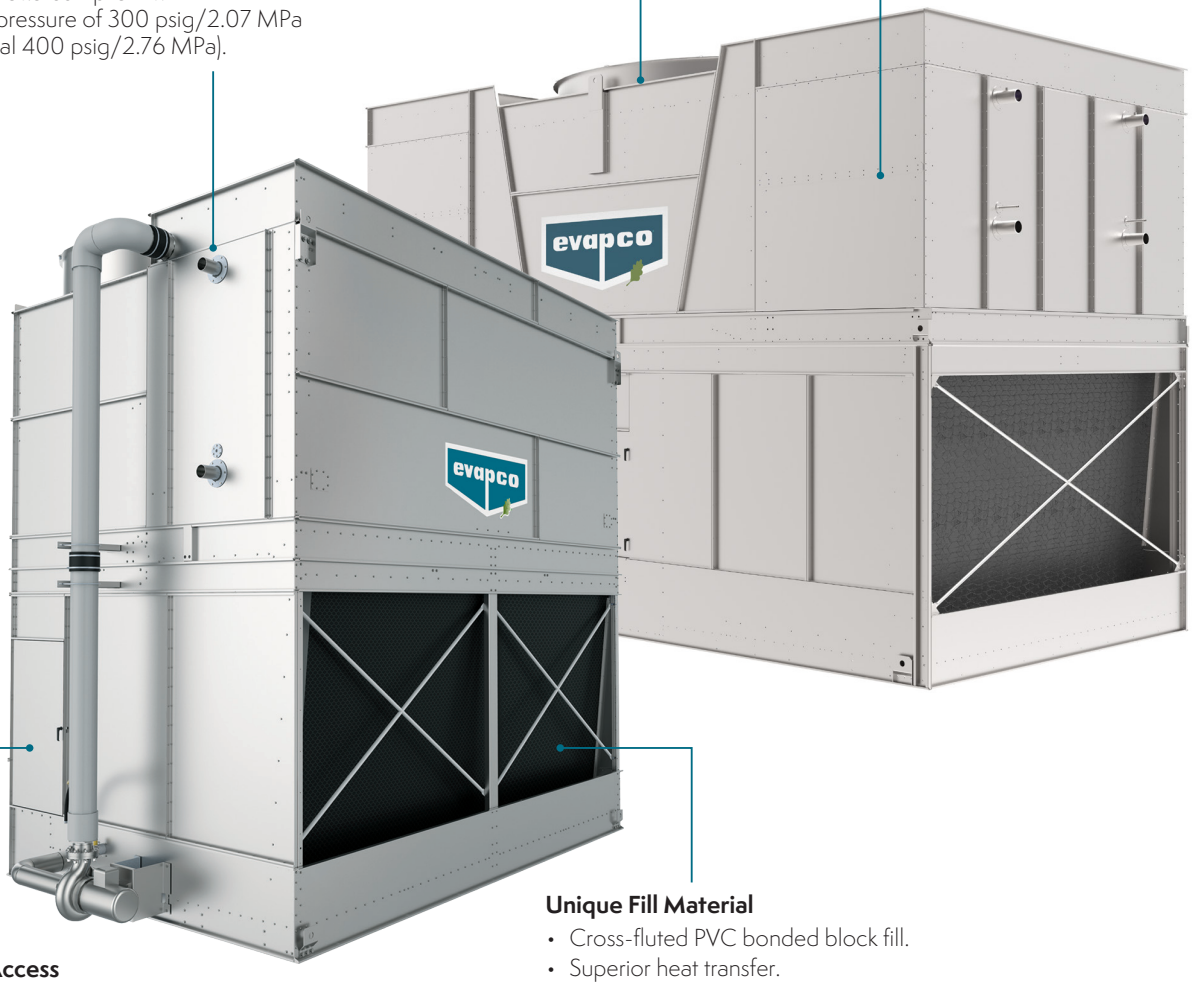
PHC-E

EVAPCO's Parallel Hybrid Condenser combines EVAPCO's industry leading condenser coil and cooling fill technology, resulting in smaller coils and reduced refrigerant charge while providing layout flexibility and maximum capacity per plan area.

Sensi-Coil® Technology
- Improved heat transfer efficiency due to tube geometry and orientation.
- Lowest refrigerant charge per ton.
- Optional TITAN 304L or 316L Stainless Steel Coil.
- ASME B31.5 compliant with design pressure of 300 psig/2.07 MPa (optional 400 psig/2.76 MPa).

Fan Options
- Number of fans depend on size of the unit, ranging from one large fan to multiple smaller fans.
- Low sound and Super Low Sound Fan options available.

General Construction
- G-235 Mill Hot-Dip Galvanized Steel Panel Construction as standard.
- Available in both 304 and 316 Stainless Steel Panel Construction.



Unit Access
- Oversized access door for enhanced accessibility.
- Internal walkway for safe and easy basin access.

Unique Fill Material
- Cross-fluted PVC bonded block fill.
- Superior heat transfer.
- Impervious to rot and decay.

The **PHC-E** line of induced draft evaporative condensers reflect EVAPCO's commitment to product development. The advanced design provides owners with many operational and performance advantages. These parallel-flow hybrid condensers are designed for easy maintenance and long, trouble-free operation. With smaller coil volumes, the PHC-E provides reduced operating refrigerant charge. Multiple units can be in installed in such a fashion to maximize capacity per plan area. PHC-E condensers are available in capacities from 97 to 2,120 Ammonia Tons.

PMRC

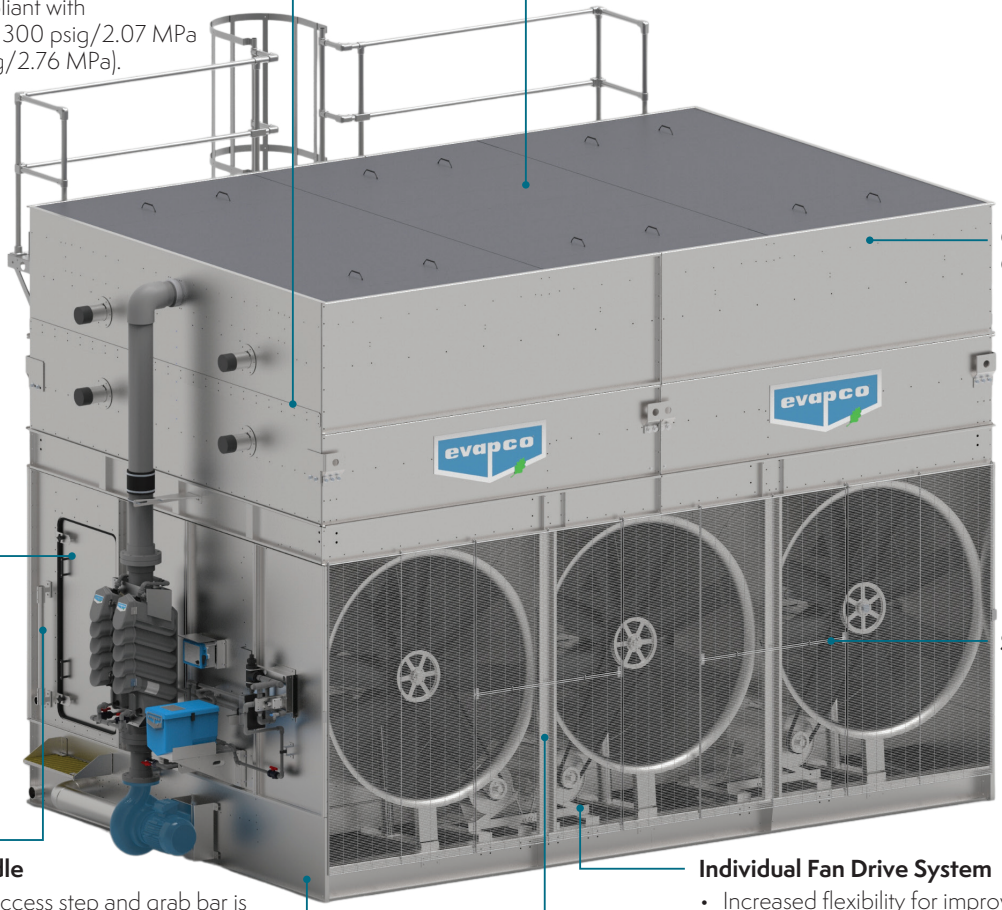
EVAPCO's forced draft axial fan condenser, the PMRC, boasts multiple ground level fan motors offering redundancy, increased reliability and easy maintenance access.

Thermal-Pak® II Heat Transfer Technology

- More surface area per plan area than competitive designs.
- Improved heat transfer efficiency due to tube geometry.
- Lower refrigerant charge.
- Optional TITAN 304L or 316L Stainless Steel Coil.
- ASME B31.5 compliant with design pressure of 300 psig/2.07 MPa (optional 400 psig/2.76 MPa).

Water Saver Drift Eliminators

- Reduce drift rate to 0.001%.
- Saves water and reduces water treatment cost.
- Improved structural integrity.
- Recessed into casing for greater protection.



General Construction

- G-235 Mill Hot-Dip Galvanized Steel Panel Construction as standard.
- Available in both 304 and 316 Stainless Steel Panel Construction.

Man Sized Access Door

Single Stage Fan

- Provides high horsepower range.
- Easier maintenance with less parts to service.

Basin Access Step & Entry Assist Handle

- An external basin access step and grab bar is provided at each exterior access door for easier basin access.

Individual Fan Drive System

- Increased flexibility for improved capacity control.
- Greater reliability through redundancy.
- Easy motor replacement.
- Front-mounted drives for improved maintenance accessibility.

Sloped Pan Bottom

- Pan bottom slopes to drain.
- Easy to clean.
- Stainless steel strainer resists corrosion.

Grease Fittings

- Now located in between fans for better serviceability.

The industry standard forced draft axial fan condensers for a reason. The **PMRC** is equipped with many features and benefits that make it *Easy to install...Easy to maintain...Easy on the operating budget...The Easy Choice!* The PMRC condensers are available in capacities ranging from 124 to 1,516 Ammonia Tons.

LSC-E & LRC

EVAPCO's forced draft, centrifugal evaporative condensers, the LSC-E and LRC, are suited for low noise applications or ducted applications, whether indoor or outdoor. Additionally, the LRC has been optimized and designed for applications where unit height is paramount.

Thermal-Pak® II Heat Transfer Technology

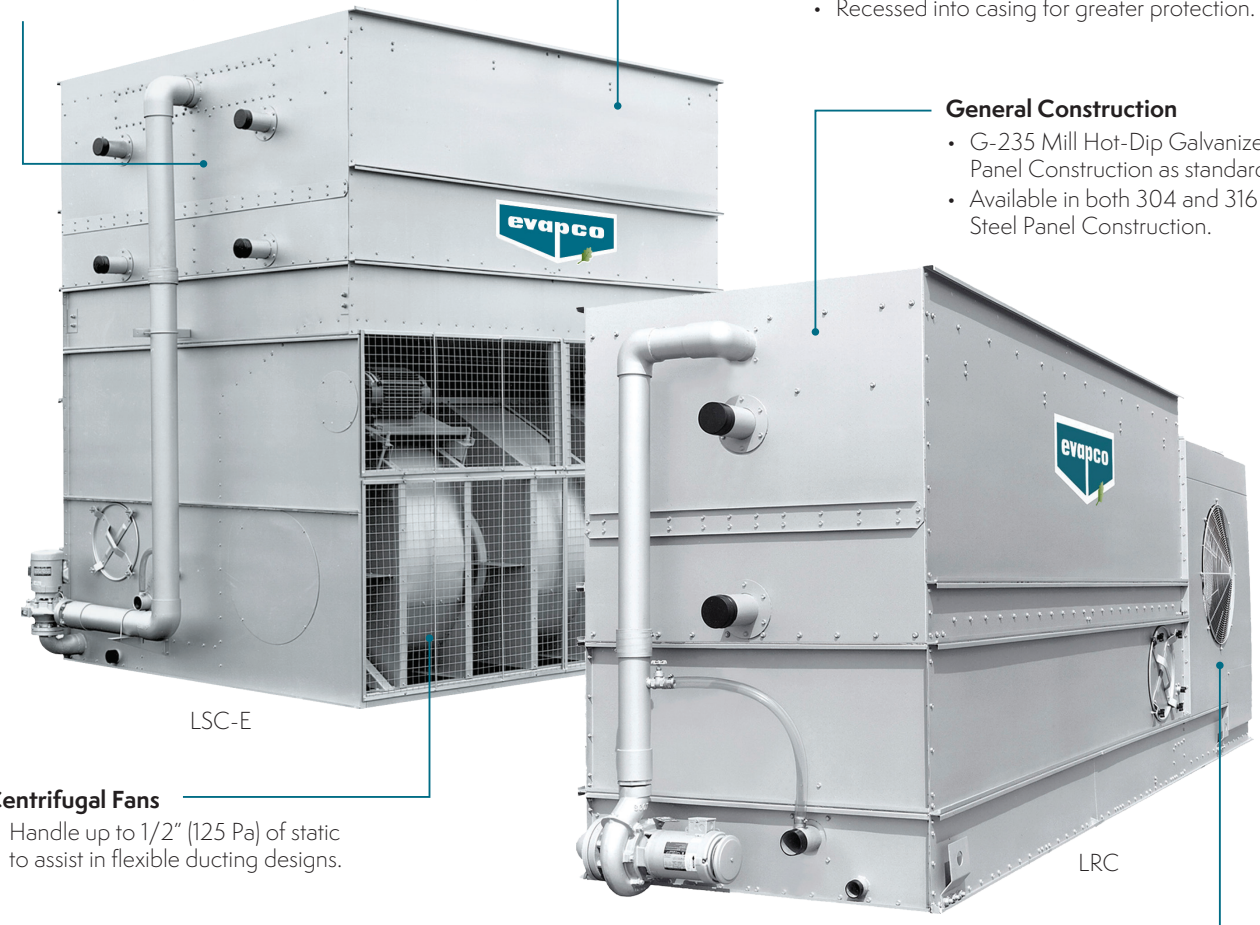
- High heat transfer efficiency due to tube geometry and orientation.
- Lower refrigerant charge.
- Optional TITAN 304L or 316L Stainless Steel Coil.
- ASME B31.5 compliant with design pressure of 300 psig/2.07 MPa (optional 400 psig/2.76 MPa).

Water Saver Drift Eliminators

- Reduce drift rate to 0.001%.
- Saves water and reduces water treatment cost.
- Improved structural integrity.
- Recessed into casing for greater protection.

General Construction

- G-235 Mill Hot-Dip Galvanized Steel Panel Construction as standard.
- Available in both 304 and 316 Stainless Steel Panel Construction.



LSC-E

LRC

Centrifugal Fans

- Handle up to 1/2" (125 Pa) of static to assist in flexible ducting designs.

Totally Enclosed Fan Motors and Superior Drive System

- Assures long life.
- All normal maintenance can be performed quickly from outside the unit.
- If required, motor may be easily removed.
- One piece fan shaft – no oil lubrication.
- Motors located outboard on multi-cell units for easier drive system access.

The **LSC-E** and **LRC** units are a result of EVAPCO's extensive experience in forced draft centrifugal fan design. Models in the LRC line are reduced height units for applications with limited height. Both product lines are suitable for ducted installations; and are designed for easy maintenance, and long, trouble free operation. These units are constructed to be IBC compliant.

eco-Air, Adiabatic Pad & Spray

The eco-Air Series of adiabatic air-cooled condensers offers maximum water savings, while maintaining similar condensing temperatures as a system using evaporative condensers.

Adiabatic Options:

Spray Assist System - Peak ambient and load cooling solution with tangential-flow, hollow cone nozzles, and self-draining copper piping.

Adiabatic Pre-Cooling Pad System - Wetted pads are used to pre-cool entering air. This solution is great for high dry bulb climates and high temperature applications.

Pad efficiency - Verified by EVAPCO for a 100% guarantee of saturation efficiency and unit performance.

Fan Options

- Electronically Commutated and NEMA/AC fans available.
- Both fan options available with the EVAPCO PLC controller.

General Construction

- Type 304 Stainless Steel as standard for increased corrosion resistance and longevity.
- G-235 galvanized steel available (Pad System Adiabatic Models only).

Coil Construction

- Type 304L Stainless Steel tubes.
- Aluminum and epoxy coated aluminum fins with varying fin thickness and spacing options.

The **eco-Air Series** of Adiabatic air-cooled condensers represents EVAPCO's newest advancement in thermal heat transfer research and development. Available with Adiabatic Pads or Spray Assist, these eco-Air units maximize heat rejection with maximum water savings. With the minimal water usage, condensing temperature during peak load and ambient conditions are greatly reduced over an air-cooled condenser, providing peak system efficiencies close to that of a system using an evaporative condenser.

eco-Air, Air-Cooled

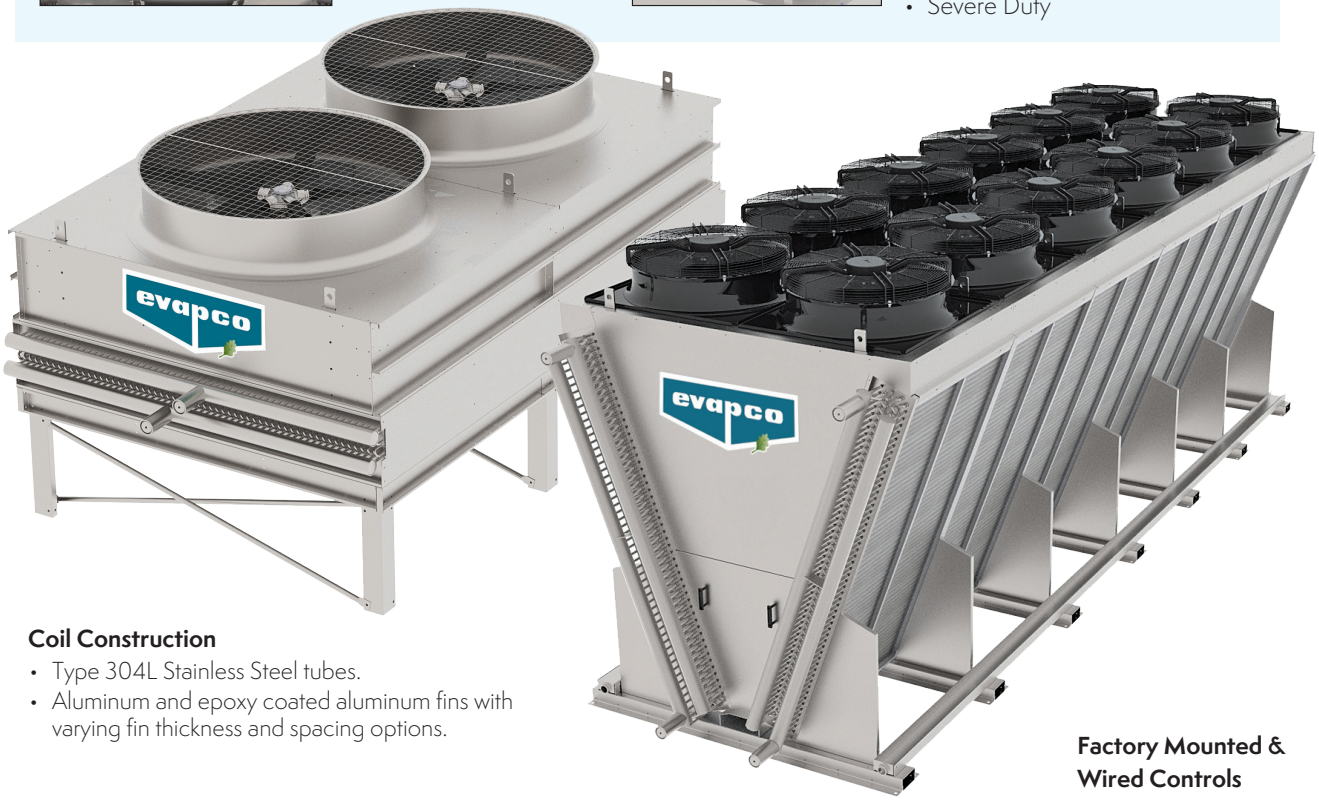
For applications where cooling water is not available, highly regulated, or is cost prohibitive, the eco-Air Series air-cooled condenser fits the bill.

Fan Motor Options:

Advanced Motor Technology Electronically Commutated (EC) or NEMA/AC fan motor designs

EC
- High Efficiency
- Zero Maintenance
- Integral Speed Control
- Inherently Low Sound

NEMA/AC
- Direct drive
- Zero maintenance permanently sealed bearings
- VFD ready
- Severe Duty



Coil Construction
- Type 304L Stainless Steel tubes.
- Aluminum and epoxy coated aluminum fins with varying fin thickness and spacing options.

Common Terminal Box
- All motors factory wired.
- Saves time in the field.

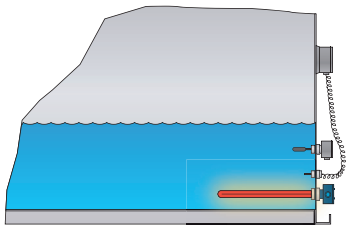
Factory Mounted & Wired Controls
- EVAPCO PLC Panel (EC Motors).
- EVAPCO PLC/VFD Panel (NEMA/AC Motors).
- Single point power connection.

The **eco-Air Series** is a robust, industrial design that is 100% fully rated and backed by EVAPCO's Performance Guarantee. The eco-Air Series offer unparalleled flexibility in a wide range of capacities, footprints, motor types and control options.

Optional Equipment

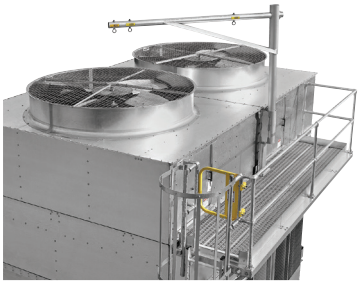
Electric Heaters

Electric immersion heaters are available factory installed in the basin of the condenser. They are sized to maintain a +40°F/4.4°C pan water temperature with the fans off and an ambient air temperature of 0°F/-18°C, -20°F/-29°C or -40°F/-40°C. They are furnished with a thermostat to cycle the heater on when required and a low water protection device to prevent the heater elements from energizing unless they are completely submerged. All components are in weather proof enclosures for outdoor use. The heater power contactors and electric wiring are not included as standard.



Self Supporting Service Platforms

Condensers are available with self-supporting service platforms that include access ladders which are designed for easy field installation. This option offers significant savings in comparison to field constructed, externally supported catwalks. The EVAPCO service platform option is located at each maintenance access door.



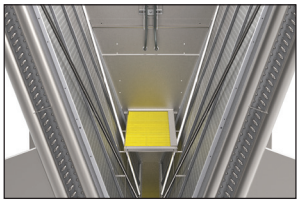
eco-ATC-A Condenser with Optional Service Platform and Motor Davit

Motor Davit

In the event that a fan motor should need to be replaced, a lightweight motor davit is available from which a chain fall can be mounted to easily lower the motor to the ground.

Internal Platform on eco-Air

Certain eco-Air models are available with an internal platform for service and maintenance of the motors.

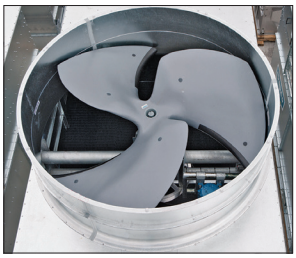


Fully Welded Stainless Steel Basin

Most condenser models are available with an inexpensive all stainless steel basin section. This provides superior corrosion resistance over other materials of construction.

Super-Low Sound Fan

EVAPCO's Super Low Sound Fan utilizes an extremely wide chord blade design and is ideal for low energy, sound sensitive installations without sacrificing thermal performance. This revolutionary technology is one-piece molded, heavy duty fiberglass reinforced polyester hub and blade construction utilizing a forward swept blade design. The Super Low Sound Fan is capable of reducing the unit sound pressure levels 9 dB(A) to 15 dB(A) depending on specific unit selection and measurement location.



Electric Water Level Control

Evaporative condensers may be ordered with an electric water level control in lieu of the standard mechanical float and make-up assembly. This package provides accurate control of water levels and does not require field adjustment.

TITAN Coils–Stainless Steel Construction

EVAPCO offers the options of Type 304L or Type 316L stainless steel construction using the Thermal Pak® II coil design. Highly efficient heat transfer coils with the ultimate corrosion protection.

WORLDWIDE MANUFACTURING LOCATIONS

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Bulletin AC26MRKT-Metric 06/26

Committed to making life easier, more reliable and more sustainable for people everywhere