



for LIFE

# LOW SOUND SOLUTIONS

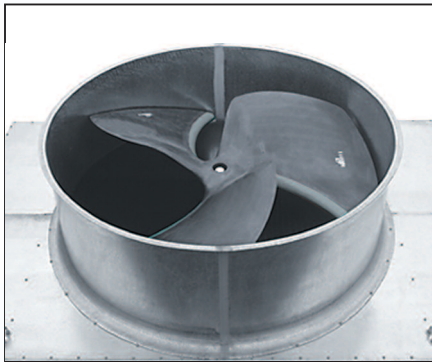
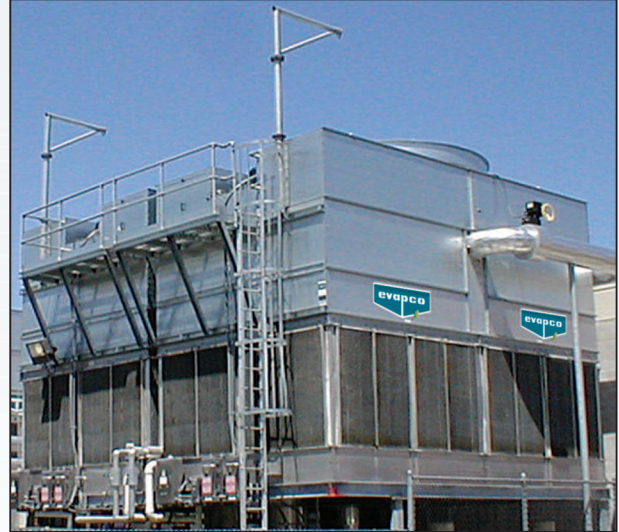


Cooling Towers, Closed Circuit Coolers & Evaporative Condensers



IARW International Association of Refrigerated Warehouses

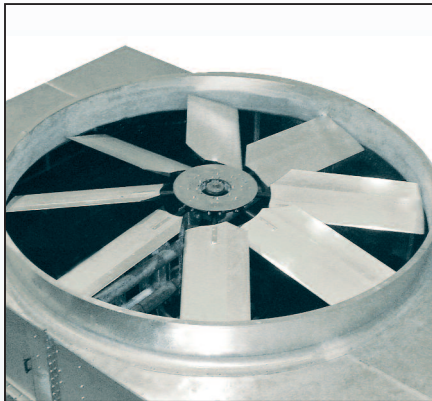




### AT, MT & ES Series – Super Low Sound Fan

The EVAPCO Super Low Sound Fan utilises an extremely wide chord blade design for sound sensitive applications where the lowest sound levels are desired. The fan is one-piece molded heavy duty FRP construction utilising a forward swept blade design. The EVAPCO Super Low Sound Fan is capable of reducing unit sound pressure levels **9 db(A) to 15 db(A)**, depending upon specific unit selection and measurement location.

*The EVAPCO Super Low Sound Fan is **optional** on ALL Induced Draft Cooling Towers, ATWB, eco-ATWB, eco-ATWB-E, MTW and ESWB Closed Circuit Coolers and ATC-E, cATC, eco-ATC and MTC-A Evaporative Condensers 2.24 metres wide and larger.*



### AT, MT & ES Series – Low Sound Fan\*

The EVAPCO Low Sound Fan utilises a wide chord blade design for sound sensitive applications where low sound levels are desired. The fan is a unique soft connect blade-to-hub design which eliminates critical blade passing frequencies at any speed. The Low Sound Fan is capable of reducing the unit sound pressure levels **4 db(A) to 7 db(A)**, depending upon specific unit selection and measurement location.

*The EVAPCO Low Sound Fan is **optional** on ALL Induced Draft Cooling Towers, ATWB, cATWB, eco-ATWB, eco-ATWB-E, MTW and ESWB Closed Circuit Coolers and ATC-E, cATC, eco-ATC and MTC-A Evaporative Condensers.*

\*The Low Sound Fan will have a CTI Certified thermal performance derate up to 3.5%. Consult the factory or EVAPCO's evapSelect selection software for actual thermal performance.



### PM Series – Super Low Sound Fan

The Forced Draft Axial Fan Cooling Tower, Closed Circuit Cooler, and Evaporative Condenser is now available with Super Low Sound Fans. The one piece heavy duty fans built of FRP construction reduce sound levels **10 db(A) to 13 db(A)** on the fan side versus traditional PM towers, coolers and condensers.

*The EVAPCO Super Low Sound Fan is **standard** on ALL PMTQ Cooling Towers & PMWQ Closed Circuit Coolers, and **optional** on ALL PMC-E Evaporative Condensers 3 metres wide and larger.*

## Induced Draft Low Sound Solutions

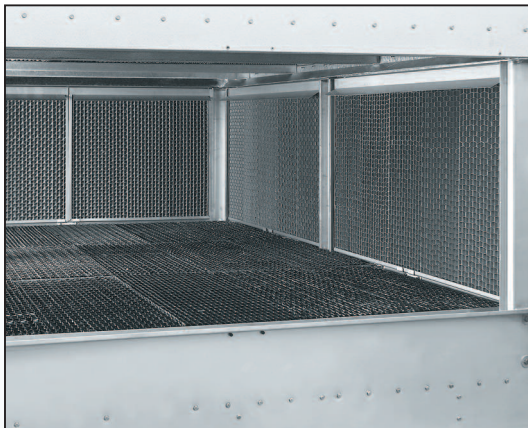


### Fan Discharge Sound Attenuation\*

Fan Discharge Sound Attenuation is a factory assembled straight sided discharge hood designed to reduce overall discharge sound levels **5 db(A) to 10 db(A)**, depending on specific unit selection and measurement location. It is constructed of G-235 galvanised steel as standard (stainless steel construction also available) and includes acoustically lined fiberglass walls and a low pressure drop baffling system. The discharge attenuation option is supported entirely by the unit and is shipped as an assembled section for easy field mounting.

*Fan Discharge Sound Attenuation is **optional** on AT and cAT Cooling Towers, ATWB, cATWB, eco-ATWB, eco-ATWB-E and ESWB Closed Circuit Coolers and ATC-E, cATC and eco-ATC Evaporative Condensers.*

\*Fan Discharge Sound Attenuation will have a CTI Certified thermal performance derate up to 5%. Consult the factory or EVAPCO's evapSelect selection software for actual thermal performance.



### Water Silencers

Water Silencers are located in the falling water area of the cold water basin. They are constructed of lightweight PVC sections and can be easily removed for access to the basin area. The water silencers reduce high frequency noise associated with the falling water and are capable of reducing overall sound levels **4 db(A) to 7 db(A)** measured at 1.5 m: from the side or end of the unit and **9 db(A) to 12 db(A)** when water is circulated with the fan(s) off.

*Water Silencers are **optional** on ALL Induced Draft Cooling Towers, ATWB, cATWB, eco-ATWB, eco-ATWB-E and MTW Closed Circuit Coolers and ATC-E, cATC, eco-ATC and MTC-A Evaporative Condensers 2.24 metres wide and larger.*



### Offset Sound Attenuation Walls

Offset Sound Attenuation Walls are EVAPCO's newest attenuation option for even greater levels of sound reduction when used in combination with the Super Low Sound Fan and Water Silencer options. The addition of Offset Sound Attenuation Walls will typically reduce the 15 metre free field sound level by an additional **3 db(A)**. The walls are constructed of G-235 galvanised steel (stainless steel construction also available) lined with acoustical padding on the inside of the walls. This option requires external support by others.

*Offset Sound Attenuation Walls are **optional** on AT Cooling Towers, ATWB, eco-ATWB and eco-ATWB-E Closed Circuit Coolers and ATC-E & eco-ATC Evaporative Condensers with Super Low Sound Fan and Water Silencer options selected.*

# Forced Draft Low Sound Solutions



## Sound Attenuation Packages

**LP/LR:** The standard LP/LR design is the quietest, low profile centrifugal fan cooling tower, closed circuit cooler and evaporative condenser in the industry. This is achieved by providing the first stage of inlet sound attenuation as part of the standard design. The LP drive system, including the fan housing, electric motor, belt, bearing, and drive is completely enclosed by a protective housing which covers the drive system and also provides a significant level of sound reduction.

**LS:** The centrifugal fan design of the LS models operate at lower sound levels, which make these units well suited for sound sensitive applications.

If the standard LS and LP/LR sound pressure levels are not low enough for certain applications, the sound levels can be further reduced by adding various stages of sound attenuation as noted below. Consult the factory for Factory Certified Sound Data for each option. Please refer to EVAPCO's evapSelect selection software for correct model number designation and CTI Certified performance or please contact your local EVAPCO's sales representative.

### Discharge Attenuation\*

Discharge Attenuation reduces overall discharge air sound levels. The discharge attenuator is a straight sided hood with insulated baffles and a large access panel to allow entry to the drift eliminators and water distribution system. If a higher discharge velocity is required with minimal sound attenuation, a tapered discharge hood is available.

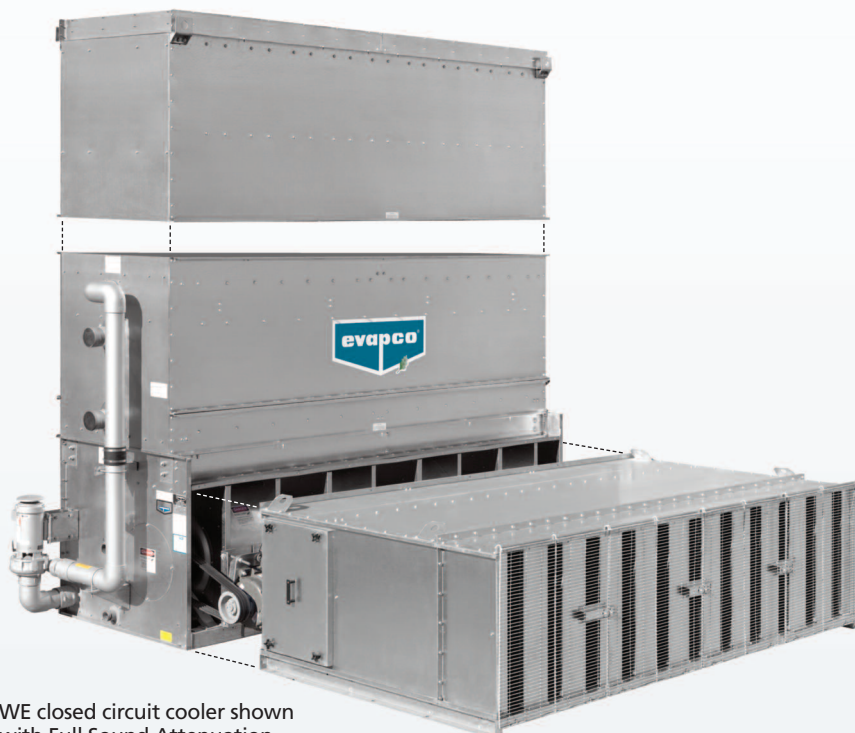
### Inlet Attenuation\*

Inlet Attenuation reduces sound radiated through the end and side air intakes. It consists of baffled panels to change the path of the air entry and to capture the radiated noise thus reducing overall sound levels generated. In addition, the external belt adjustment mechanism is extended through the inlet attenuator to allow easy belt adjustment just within the access door. Solid bottom panels are included with this option to force the inlet air through the attenuator.

### Fan Side Inlet Attenuation (LP/LR Only)

Fan Side Inlet Attenuation reduces sound radiated from the fan side air intakes and has an open side to allow for air entry. Fan side inlet attenuation is included if full attenuation is selected for an LP/LR model.

\* When both Discharge Attenuation and Inlet Attenuation are selected, this combination is referred to as Full Attenuation.



LSWE closed circuit cooler shown with Full Sound Attenuation

† Mark owned by the Cooling Technology Institute



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:

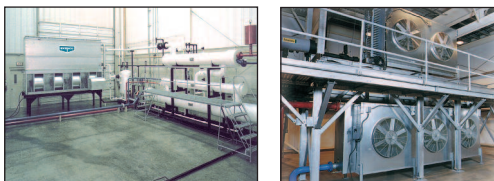
- Commercial HVAC
- District Energy
- Industrial Process
- Industrial Refrigeration
- Power

EVAPCO's powerful combination of financial strength and technical expertise has established the company as a recognised manufacturer of market-leading products on a worldwide basis. EVAPCO is also recognised for the superior technology of their environmentally friendly product innovations in sound reduction and water management.

EVAPCO is an employee owned company with a strong emphasis on research & development and modern manufacturing plants. EVAPCO has earned a reputation for technological innovation and superior product quality by featuring products that are designed to offer these operating advantages:

- Higher System Efficiency
- Environmentally Friendly
- Lower Annual Operating Costs
- Reliable, Simple Operation and Maintenance

With an ongoing commitment to Research & Development programs, EVAPCO provides the most advanced products in the industry—**Technology for the Future, Available Today!**



EVAPCO products are manufactured on five continents around the world and distributed through hundreds of factory-authorized sales representatives.

## Solutions for Sound Sensitive Applications



EVAPCO's induced draft counterflow product lines are now available with an expanded line of equipment options to reduce the overall sound generated from the side or top of the unit. Each option provides various levels of sound reduction, and most can be used in combination to provide the lowest sound levels available in the industry. Performance is CTI Certified on all induced draft cooling towers and closed circuit coolers. Consult EVAPCO's evapSelect selection software for unit sound levels or a full octave band data sheet. If a detailed analysis is required for your application, please consult your EVAPCO sales representative.



EVAPCO's forced draft counterflow product lines are available with Super Low Sound Fan Technology. For the first time, forced draft axial fan products are available with sound levels comparable to a centrifugal fan at a fraction of the power consumption. Consult EVAPCO's evapSelect selection software for unit sound levels or a full octave band data sheet. If a detailed analysis is required for your application, please consult your EVAPCO sales representative.

# EVAPCO Low Sound Solutions

## Suggested Specifications



### Thermal Performance

The cooling towers, inclusive of all accessories and sound reduction options, shall be CTI certified under standard 201RS (STD-201RS).

### Sound Performance

Cooling tower sound performance shall be provided in pressure dB(A) measured 1.5 metres above the fan discharge during full speed fan operation with water running in accordance with CTI acceptance test code 128 (ATC-128).

### Super Low Sound Axial Propeller Fans (AT Series)

Units shall be provided with **Super Low Sound Fans** in order to assure a maximum sound pressure level not to exceed \_\_\_\_ dB(A) measured 1.5m away from the fan discharge cylinder during full speed operation in accordance with CTI Standard ATC-128.

Fans shall be high efficiency axial propeller type with non-corrosive FRP hub and blade construction. The one-piece molded heavy duty fan construction shall utilise a forward swept blade design for superior sound quality. Each fan shall be statically balanced and installed in a closely fitted cowl with venturi air inlet for maximum fan efficiency. The fan cowl shall be covered with a heavy gauge hot dip galvanised steel (or stainless steel) fan guard.

### Low Sound Axial Propeller Fans\*

Units shall be provided with **Low Sound Fans** in order to assure a maximum sound pressure level not to exceed \_\_\_\_ dB(A) measured 1.5m above the fan discharge cylinder during full speed operation in accordance with CTI Standard ATC-128.

Fans shall be high efficiency axial propeller type with aluminum wide chord blade construction. The Low Sound Fan shall utilise a unique soft-connect blade-to-hub design that is compatible with Variable Speed Drives. Each fan shall be statically balanced and installed in a closely fitted cowl with venturi air inlet for maximum fan efficiency. The fan cowl shall be covered with a heavy gauge hot dip galvanised steel (or stainless steel) fan guard.

### Fan Discharge Sound Attenuation

The unit shall be provided with a factory assembled straight sided discharge sound attenuation package designed to reduce overall discharge sound levels. The discharge attenuator shall be supported entirely by the unit and shipped as an assembled section for easy mounting in the field. It shall be constructed of G-235 galvanised steel (or stainless steel) and include insulated walls and baffles acoustically lined with high density fiberglass. The discharge attenuator shall be covered by a heavy gauge hot dip galvanised steel (or stainless steel) fan guard to prevent debris from entering the attenuator.

### Water Silencer\*

The unit shall be provided with water silencers located in the falling water area of the cold water basin. The water silencers shall be constructed of lightweight PVC in easily handled sections for ease of removal and access to the basin area.

\* These options are available on Induced Draft only.



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