Bulletin 181-E Metric

evapco® for LIFE

ATC-DC

The NEW Family of Evaporative Condensers

NEW!

ARID *fin Pak*™

Ellipti-*fin*® *coil*

CROSSCOOL™ Technology

Advanced Technology Condenser with Dry Coil for Hybrid operation

Providing Maximum Water Savings & Higher Dry Switchover Temperatures

RESEARCH POWERED SOLUTIONS!

CERTIFIED EN ISO 9001

Mr. GoodTower® evapco

IARW International Association of Refrigerated Warehouses

ARI

CE PRESSURE EQUIPMENT DIRECTIVE 97/23/EC ASSESSED BY NOTIFIED BODY

MEMBER iiar International Institute of Ammonia Refrigeration

eurammon refrigerants delivered by mother nature

EAC

ATC-DC

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
- Power

EVAPCO's powerful combination of financial strength and technical expertise has established the company as a recognized manufacturer of market-leading products on a worldwide basis. EVAPCO is also recognized 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.

Design and Construction Features

The ATC-DC line of evaporative condensers represents EVAPCO's newest advancement in thermal heat transfer research and development. Utilizing the *NEW* **ARID-*fin Pak*™** heat transfer coil, the ATC-DC offers improved heat transfer during dry operation and significant water savings due to extended periods of dry operation.

The ATC-DC is the latest example in EVAPCO's on-going commitment to quality, environmentally friendly products.

Water Saver Drift Eliminators

- New patented design reduces drift rate to < 0.001%
- Saves water and reduces water treatment cost
- Greater structural integrity vs. old style blade-type
- Recessed into casing for greater protection
- Drift eliminator Eurovent OM-14-2009

Certification Diploma N° : 10.02.455

EUROVENT Certification Company certifies that

Drift Eliminators

from

EVAPCO EUROPE N.V.

Located at

Industriezone Oost 4010, B-9700 Tongeren, Belgium

Range

Counter flow EDC001

Trade name

EVAPCO

have been assessed according the requirements of following standard

OM-14-2009

The list of certified products is displayed at :

http://www.eurovent-certification.com

EVAPCO EUROPE N.V.

is authorised to use the EUROVENT Certification mark in accordance with the rules specified in the Operational Manual

OM-14-2009

Erick MELQUIOND

Managing Director

Approval date : 2010/02/24

Re-checked on : 2012/12/20

Valid until : 2014/03/31

PVC Spray Distribution Header with ZM II™ Nozzles

- Large orifice nozzles prevent clogging (no moving parts)
- Nozzles are threaded into header at proper orientation
- Fixed position nozzles require zero maintenance
- Guaranteed for 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
- Optional: full stainless steel welded basin

Stainless Steel Strainers

- Resists corrosion better than other materials

Totally Enclosed Pump Motors

- Help assure long, trouble-free operation

Advanced Design Smooth Flow Fans

- Totally Enclosed Fan Motors assures long life
- Power-Band Belts for Better Lateral Rigidity
- Advanced Design Aluminum Fan Blades
- Non-corroding Cast Aluminum Sheaves
- Heavy-Duty Fan Shaft Bearings with L-10 life of 75,000 - 135,000 hrs
- All Other Components Corrosion Resistant Materials

IBC Compliant Design
Refer to page 25

Low Sound Options available
Refer to page 19

Super Low Sound Fan (optional)

- Extremely wide sloped fan blades for sound sensitive applications
- One piece molded heavy duty construction
- 9-15 dB(A) sound reduction

Ellipti-fin® Heat Transfer Technology

Features EVAPCO's exclusive CROSSCOOL™

Features EVAPCO's exclusive ***CROSS*COOL™** tube enhancement for greater internal heat transfer.

- Thermal Pak® coil with extended surface.
- Water savings through extended periods of dry operation.
- High heat transfer efficiency.
- Low refrigerant charge.

Patent Pending

ARID fin Pak® Heat Transfer Technology

Dry Cooling Coil

Featuring Stainless Steel 304 Tubing with Aluminum Magnesium Fins

- Maximizes Water Efficiency
- Higher Dry Switchover Temperatures
- Plume Elimination in Dry Mode
- Plume Abatement in Evaporative Mode
- Increases Evaporative and Dry Cooling Efficiency

Easy to Service Motor Mount Design

- **All normal maintenance can be performed quickly from outside the unit**
- Designed for easy belt adjustment
- Extended lube lines for easy bearing lubrication
- If required, motor may swing to outside for easy removal

Louver Access Door

- Hinged access panel with quick release mechanism
- Allows easy access to perform routine maintenance and inspection of the make-up assembly, strainer screen and basin
- Available on larger models

Easy Field Assembly

- A new field assembly seam design which ensures easier assembly and reduced potential for field seam leaks
- Self-guided channels guide the fan casing section into position improving the quality of the field seam
- Eliminates up to 66% of fasteners *(Patent Pending)*

WST Air Inlet Louvers (Water and Sight Tight)

- Easily removable for access
- Patented design to keep sunlight out–preventing biological growth
- Keeps water in while keeping dirt and debris out

U.S. Patent No. 7927196

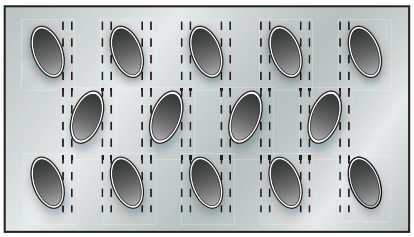
ATC-DC

ATC-DC Dry Performance

EVAPCO Water Systems Solutions

EVAPCO has a long standing commitment to heat transfer research and development. This commitment has resulted in a number of advancements in heat transfer coil design. Up until the mid-1980's, evaporative condensers were manufactured with tightly packed round tube coils. Through thousands of hours of testing and research, EVAPCO developed the Thermal Pak® coil. The Thermal Pak® coil was patented in 1987, (now expired), and changed the thinking of system design engineers by changing the shape of the coil tubes.
The elliptical tube design maximized the effective tube surface area while lowering airside pressure drop and allowing for higher water loading.
The combination of the elliptical shape tube in the Thermal Pak® orientation increased heat transfer efficiency and resulted in one of the highest capacities per plan area of evaporative condensers available today.

Throughout the late 1980's and into the 1990's EVAPCO was continuously looking for ways to improve heat transfer efficiency. This research resulted in the development of the Thermal Pak® II heat transfer coil. The Thermal Pak® II coil utilized the same elliptical shape tube introduced in the original Thermal Pak coil, but changed the orientation of the tubes to improve the tubes air to water interface for increased heat transfer efficiency.



Thermal-Pak® Coil II by EVAPCO

Research and development is an on-going process at EVAPCO. Through the success of the Thermal Pak II coil, EVAPCO saw the potential for new coil configurations and the need for new manufacturing technology to improve processes and efficiency. During this same time, it became evident that a need exists for more environmentally conscious cooling products.

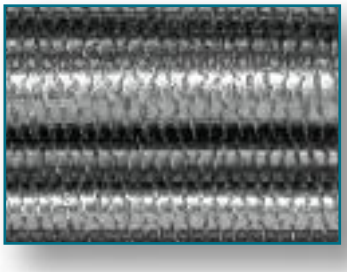
The combination of EVAPCO's R&D, manufacturing and environmental commitment has resulted in the development of **Ellipti-*fin*®** Coil Heat Transfer Technology.

The **Ellipti-*fin*®**coil utilizes elliptical shape tube with extended surface fins for maximum heat transfer efficiency. The extended surface increases the heat transfer efficiency in the evaporative or wet mode as well as the dry mode of operation.

Powered by Innovative Coil Technology

ATC-DC

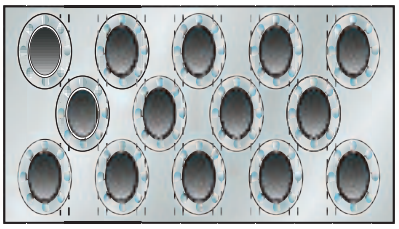
Ellipti-fin®
Heat Transfer Coil



- Elliptical Tubes with Spiral Wound Fins
- Improved Dry and Wet Operation
- All Rows Finned
- Hot-Dip Galvanized Steel
- Nitrogen Charged Before Shipment

ARID fin Pak™
Dry Cooling Coil

- Superior Dry Heat Transfer
- 5/8" Type 304L Stainless Steel Tubes
- Marine Grade Aluminum Fins
- Hydraulically Expanded
- Nitrogen Charged Before Shipment



Ellipti–fin™ Finned Eliptical Tube by EVAPCO
(Patend pending)

The **Ellipti-*fin***® coil incorporates features of both the Thermal Pak and Thermal Pak II coils as the tubes are oriented vertically yet spaced so as not to increase the airside pressure drop. As such, ATC-DC condensers are not subject to the performance penalties normally associated with round tube extended surface coils.

Ellipti-*fin*® coils are manufactured from high quality internally enhanced ***CROSS*COOL**™ carbon steel tubing following the most stringent quality control procedures and in accordance with the PED 97/23 EC. Each circuit is inspected to assure the material quality and tested before fins are wound onto the surface of the tube. Each circuit is then assembled into a complete coil. Finally, the assembled coil is pressure tested under water to make sure it is leak free. To protect the coil against corrosion, and complete the bond between tube and fin, the entire assembly is dipped in molten zinc (hot dip galvanized) at a temperature of approximately 430°C.

Ellipti-*fin*® coil design utilizes counterflow heat transfer. The rows of the finned elliptical tubes are positioned vertically in the direction of airflow to enhance turbulence, which increases heat transfer while minimizing airside pressure drop. The design features of EVAPCO's **Ellipti-*fin***® condensing coils ensure the end-user will receive maximized evaporative heat transfer efficiency wet or dry.

NEW

ARID *fin Pak*™ Dry Cooling Coil

ARID-*fin Pak*™ Dry Cooling Coils are constructed with 15 mm diameter type AISI 304L stainless steel tubing and marinegrade aluminum fins. The stainless steel tubing meets the requirements of PED 97/23 EC. The standard **ARID-*fin Pak***™ Dry Cooling Coils are designed with a fin spacing of 2.5 mm for maximum heat transfer efficiency in the smallest plan area. Optional fin densities are available (Consult the factory for selections and pricing).
The AISI 304L round tubes are fit into the aluminum fin plate and hydraulically expanded. EVAPCO's precisely controlled hydraulic expansion process results in more consistent contact between the tube and fin plate than conventional mechanical expansion methods. The entire **ARID-*fin Pak***™ Dry Cooling Coil is pressure tested to 2689 kPa, evacuated and nitrogen charged prior to final assembly and shipment.

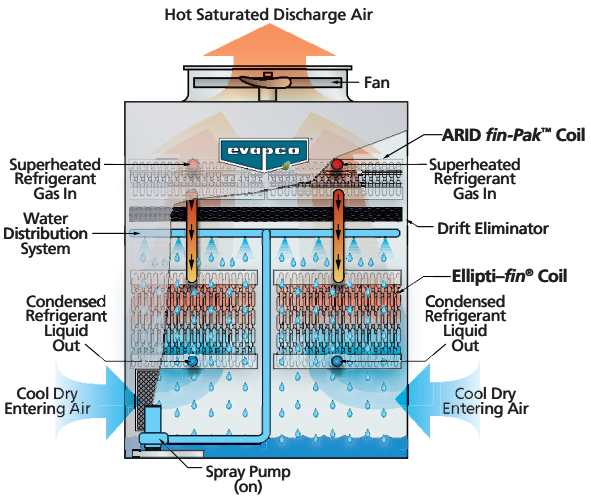
ATC-DC

DESIGN FEATURES

Principle of Operation

Evaporative (Wet) Mode - Spray Pump(s) Energized

The refrigerant gas is discharged from the compressor into the inlet of **ARID-*fin Pak***™ coil through the top coil connections. Dry Coil which is positioned in the discharge air stream above the unit's drift eliminators and below the fan section. Ambient air is drawn into the unit, by the condenser's fans, through inlet louvers located in the lower section above the water basin. The air is drawn upward through the wet coil into the drift eliminators (which remove entrained water droplets from the air stream) and into the **ARID-*fin Pak***™ Dry Coil Heat from the refrigerant gas is transferred to the air as it comes into contact with the tubes and densely packed fins of the **ARID-*fin Pak***™ Dry Coil. The refrigerant gas exits the **ARID-*fin Pak***™ Dry Coil and travels via inter-connecting piping (by others) to the inlet of the **Ellipti-*fin***® Coil located in the lower section of the ATC-DC Condenser. Water from the condenser's sump is circulated over the wet coil as the ambient air is simultaneously drawn into the unit and travels up through the **Ellipti-*fin***®. A portion of the spray water is evaporated into the air stream as it travels through the wet coil. This evaporative process cools the spray water, which in turn cools the coil tubes and extended surface fins. The cool tube walls and extended surface fins cause the refrigerant gas to give up heat and condense into a liquid. The condensed liquid flows out of the **Ellipti-*fin***® to the high pressure receiver for return to the system. The water which has not evaporated falls into the sump and is recirculated by the spray pump to the water distribution system located above the **Ellipti-*fin***®.



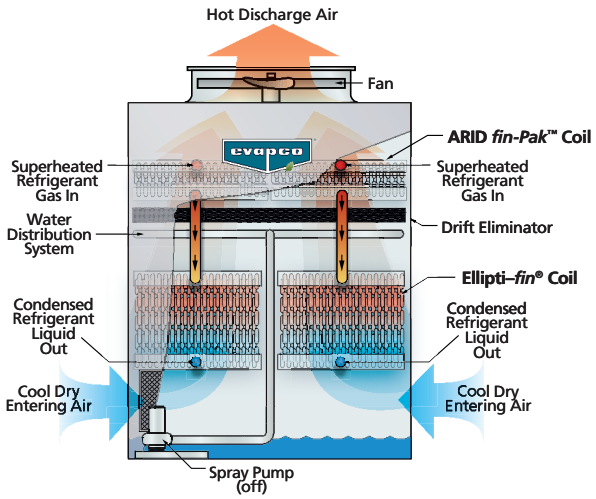
ATC-DC Evaporative Mode

The amount of water consumed during this mode of operation is a function of the amount of heat rejected. Water consumption includes the volume of water which is evaporated during the cooling process and the amount of water which is discharged (referred to as "blow-down") to maintain the required cycles of concentration in order to meet water quality guidelines.

Dry Mode - Spray Pump De-energized

The refrigerant gas is discharged from the compressor into the inlet of the **ARID-*fin Pak***™ Dry Coil which is positioned in the dry air stream above the unit's drift eliminators and below the fan section. Ambient air is drawn into the unit by the condenser's fans, through inlet louvers located in the lower section above the water basin. The air is drawn upward through the **Ellipti-*fin***® into the ARID fin Pak™ Dry Coil above. Heat from the refrigerant gas is transferred to the air as it comes into contact with the tubes and densely packed fins of the ARID fin Pak™ Dry Coil. The refrigerant gas exits the ARID fin Pak™ Dry Coil and travels via the inter-connecting piping to the inlet of the Ellipti–fin®. The ambient air entering the unit travels upward through the Ellipti–fin® Coil which in turn cools the coil tubes and extended surface fins. The cool tube walls and extended surface fins cause the refrigerant gas to give up heat and condense into a liquid. The condensed liquid flows out of the Ellipti–fin® to the high pressure receiver for return to the system.

There is **NO WATER** consumed during this mode of operation.



ATC-DC Dry Mode

DESIGN FEATURES

ATC-DC

EVAPCOAT Corrosion Protection System

EVAPCO, long known for using premium materials of construction, has developed the ultimate system for corrosion protection in galvanized steel construction – the EVAPCOAT Corrosion Protection System. Marrying corrosion free materials with heavy gauge mill hot-dip galvanized steel construction to provide the longest life product with the best value.

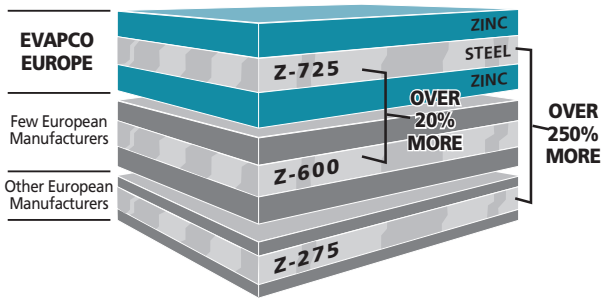
The Evapcoat Corrosion Protection System consist of:

• Z-725 Mill Hot-Dip Galvanized Steel Construction

Mill hot-dip galvanized steel has been successfully used for over 25 years for the protection of evaporative condensers against corrosion. There are various grades of mill galvanized steel each with differing amounts of zinc protection. EVAPCO has been a leader in the industry in developing heavier galvanizing, and was the first to standardize on Z-600 mill hot-dip galvanized steel. Now, EVAPCO is, once again, increasing the level of corrosion protection by being the first manufacturer in Europe to use Z-725 mill hot-dip galvanized steel.

Z-725 designation means there is a minimum of 725 g of zinc per m^2 of surface area present on the steel. Z-725 is the heaviest level of galvanizing available for manufacturing evaporative condensers and has over 2.5 times more zinc protection than competitive designs using Z-275 steel. With Z-725 mill hot-dip galvanized steel construction, EVAPCO provides galvanized steel panels with corrosion protection that approaches the level of the hot-dip galvanized heat exchanger coils.

During fabrication, all panel edges are coated with a 95% pure zinc-rich compound for extended corrosion resistance.



• Type 304 Stainless Steel Strainers

Subjected to excessive wear and corrosion, the sump strainer is critical to the successful operation of the condensers. EVAPCO uses only stainless steel for this very important component.

• PVC Air Inlet Louvers

The innovative design uses corrosion free materials while effectively eliminating splash out and reducing the potential for algae formation inside the cooler.

• PVC Drift Eliminators

The final elements in the upper part of the condenser are moisture eliminators which strip the entrained water droplets from the leaving air stream.

EVAPCO eliminators are constructed entirely of inert, corrosion-free PVC. This PVC material has been specially treated to resist damaging ultraviolet light. The eliminators are assembled in easily handled sections to facilitate removal thereby exposing the upper portion of the unit and water distribution system for periodic inspection.

• PVC Water Distribution System, *ZM II*™ Spray Nozzle

The fixed position *ZM II*™ Spray Nozzles are mounted in corrosion-free PVC water distribution pipes. Together, these elements combine to provide unequaled coil coverage, scale prevention and make the industries best performing non-corrosive, maintenance-free water distribution system.

• Totally Enclosed Motors

EVAPCO uses totally enclosed motors for all fan and pump motors as standard. These superior motors help to assure longer equipment life without motor failures, which result in costly downtime.

• Alternate Materials of Construction

EVAPCO induced draft condensers have a modular design which allows for specific areas to be enhanced for increased corrosion protection. For particularly corrosive environments, EVAPCO coolers are available with Stainless Steel construction for the basin, casing and/or coil.

• Stainless Steel Welded Basin

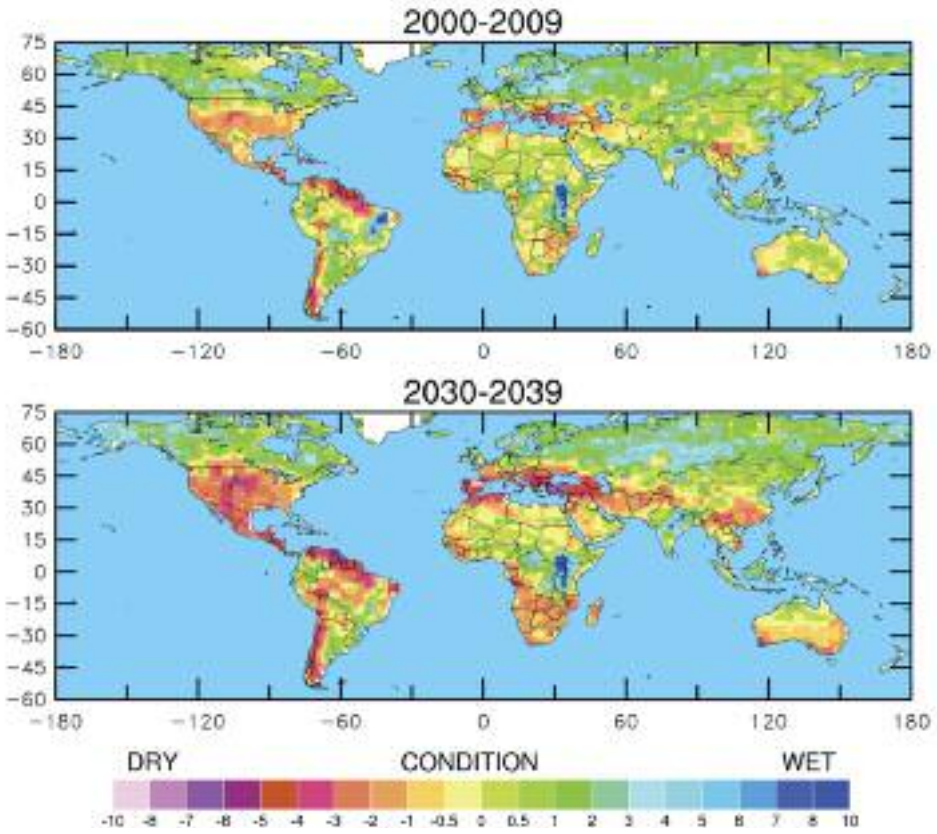
The basin area of a condenser is often subjected to high concentrations of impurities and silt. In addition to the EVAPCOAT Corrosion Protection System, EVAPCO offers optional stainless steel construction for superior corrosion resistance. This option provides Type 304 or Type 316 stainless steel for the entire basin section - including the support columns and air inlet louver frames.

ATC-DC

DESIGN FEATURES

Future Drought Projections Worldwide

The frequency and persistence of global drought conditions is not expected to change with current climatic conditions. The maps below illustrate the potential for future drought worldwide over the decades indicated, based on current projections of future greenhouse gas emissions [1]. It is quite clear that by 2030 drought conditions will be severe if no action is taken NOW to reduce water use.



Maps are not intended as forecasts, since the actual course of projected greenhouse gas emissions as well as natural climate variations could alter the drought patterns [2].

ATC-DC Industrial Condensers are an example of EVAPCO's corporate commitment to protect the world's valuable potable water resources. The ATC-DC product line incorporates the latest research and development in heat transfer technologies.

1 Based on a study released by the National Center for Atmospheric Research (NCAR) titled " Drought under Global Warming: A Review", by Aiguo Dai, a leading climatologist.

2 The scale used to measure drought on these maps is the Palmer Drought Severity Index, which assigns positive numbers when conditions are unusually wet for a particular region, and negative numbers when conditions are unusually dry. A reading of -4 or below is considered extreme drought. Regions that are blue or green will likely be at lower risk of drought, while those in the red and purple spectrum could face more unusually extreme drought conditions.

DESIGN FEATURES

ATC-DC

Engineered for Efficient Dry Performance to Meet Future Global Climate Change and Water Use Restrictions

Significant Water Savings

The **ARID-*fin Pak***™ Dry Coil combined with EVAPCO's **Ellipti-*fin***® coil technology enables the ATC-DC to be operated in a 100% Dry Mode at a significantly higher switchover temperature than that of a typical bare tube coil evaporative condenser. This leads to a much higher number of hours per year the condenser can operate in dry mode (spray pumps off), thus significantly reducing annual water consumption. This combination of heat transfer technologies makes the ATC-DC the most water efficient EVAPCO condenser.

Consider a dairy processing plant application near Zavemtem (Brussels airport), Belgium - where a condenser is required to reject a constant heat load of approximately 1400 kW of refrigeration at a 32°C condensing temperature and a summer design wet bulb temperature of 22°C (an approach of 10°C). The load profile is shown on the next page. The process operates 24 hours a day, 5 days a week.

The ATC-E evaporative condenser, the eco-ATC-A and the new ATC-DC evaporative condenser are compared as follows:

Model Comparison

Model	ATC-XC525E	eco-ATC-606A	ATC-DC-1018M-35-2EF
Plan Area	3 m x 5,5 m	3 m x 5,5 m	3 m x 5,5 m
Fan Motor	22 kW	22 kW	22 kW
Pump Motor	4 kW	5,5 kW	5,5 kW

Dry Operation Performance Comparison at 32°C condensing

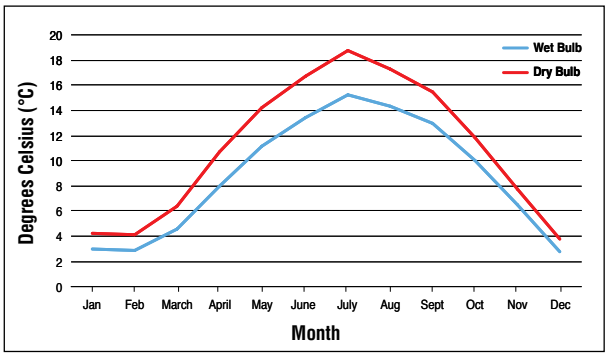
Model No.	Dry Bulb Switch Point (°C) (% Design kW for R-717)		
	100%	75%	50%
	1400 kW	1050 kW	700 kW
ATC-XC525E	-46,6	-26,9	-7,3
eco-ATC-606A	-8,1	1,7	11,7
ATC-DC-1018M-35-2EF	4,2	11,2	18,1

Every model in the ATC-DC product line has been engineered to provide a minimum of 50% of the design heat rejection (kW) at 15,6°C ambient dry bulb temperature or higher, based on maintaining 35,7°C condensing temperature.

ATC-DC Water Saving Analysis

Utilizing the Water & Energy Savings Calculator in evapSelect with required key inputs:

Monthly Average Ambient Temperature
Brussels airport, Belgium

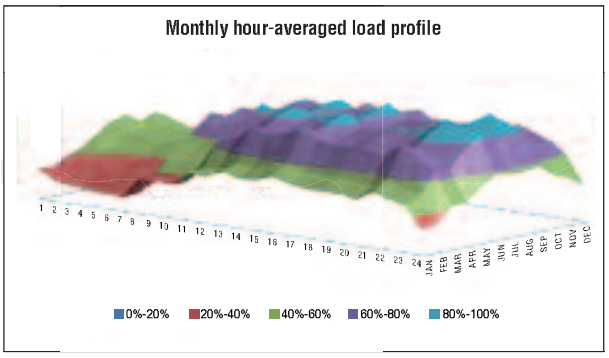


Weather Station: for Brussels airport, the selected weather station is **Bruxelles National**

The Temperature Profile generated to estimate water and energy usage is based on 5 year weather data from the National Climatic Data Center (NCDC). The weather data shown above was collected from **BRUXELLES NATIONAL, BE**

For more information visit: http://www.ncdc.noaa.gov/oa/ncdc.html

Load Profile: Dairy Processing



Dairy Processing
Profile Provided Courtesy of Cascade Energy

Cycles of Concentration : ..... Historical water analysis is on average 3 cycles
Profile Days : ..... **5** Week Days, and 2 Weekend Days
Potable Water Cost : ..... Estimated at 1,58 €/m³
Waste Water Sewer Charge: ..... Estimated at 1,55 €/m³
Waste Water Treatment Costs: ..... Estimated at 1,19 €/m³
Power Costs: ..... Estimated at **0,10** €/kwh

Water and Energy Analysis *
Selected Weather Station: **Bruxelles National, BE**
Condensing Temperature: 32°C
Wet Bulb: 22°C
Refrigerant: NH_3

Load Profile: Dairy
Week Days: 5
Weekend Days: 2
Cycles of Concentration: 3

Model Description:	**ATC-XC525E**	**eco-ATC-606A**	**ATC-DC-1018M-35-2EF**
Quantity:	1	1	1
Dry Bulb Switchover (°C)	-44,6	-8.1	4,2
Total Water Usage per year (m^3)	12.015	9.191	6.046
Total Water Cost per year (€)	23.670	18.107	11.911
Total Energy Usage per year (kWh)	59.678	55.709	56.048
Total Energy Cost per year (€)	5.968	5.571	5.605
Total Estimated Operating Cost (€)	**29.638**	**23.678**	**17.516**

* Water and energy use and costs are estimates only and are provided for the purpose of comparing the performance of evaporative condensers. Actual water/energy usage and costs will vary depending on weather, load profile, cycles of concentration and the control logic used to optimize system performance. Also, power, water and sewer costs are subject to local rates. The water and energy usage is calculated assuming a fixed condensing temperature and the use of variable frequency drives. Projected energy use is for evaporative condensers only, NOT total refrigeration system energy use. The Temperature Profile generated to estimate water and energy usage is based on 5 Year weather data from the National Climatic Data Center (NCDC). Load profiles utilized in the program are based on industrial refrigeration applications and have been provided courtesy of Cascade Energy- Portland, OR.

DESIGN FEATURES

ATC-DC

Axial Fan Drive System
Belt Drive Units
2.4 m and 4.9 m Wide ATC-DC Models

The fan motor and drive assembly on these units are designed to allow easy servicing of the motor and adjustment of the belt tension from the exterior of the unit. The T.E.F.C. fan motor is mounted on the outside of these models.

External Motor Mount (with optional ladder)

A large hinged access door with a "quick release" latch provide access to the fan section for maintenance.

NOTE: the sloped access ladder is available on all ATC-DC models. Please check conformity with local legislation before application.

Belt Drive Units
3 m, 3.6 m, 6.1 m & 7.3 m Wide ATC-DC Models

Designed as the ideal replacement cooler, these models provide both cost effective and energy efficient alternatives to obsolete centrifugal fan designs. The 3 m wide plan areas are also well suited for new installations and provide more layout flexibility. The unique belt drive design features are detailed below.

Motor Base Assembly

The fan motor and drive assembly is designed to allow easy servicing of the motor and adjustment of the belt tension from the exterior of the unit. The T.E.A.O. fan motor is located inside the fan casing on a rugged heavy duty motor base. The innovative motor base also features a unique locking mechanism for a positive adjustment.

The motor base is designed to swing out through a very large 1.3 m^2 access opening. This allows for easy servicing of the motor.

Motor Access

Power- Band Drive Belt: The Power-Band is a solid-back, multigroove belt system that has high lateral rigidity. The belt is constructed of neoprene with polyester cords. The drive belt is designed for 150 percent of the motor nameplate kW for long life and durability.

Fan Shaft Bearings: The fan shaft bearings in ATC-DC units are specially selected for long, trouble-free life. They are rated for an L-10 life of 75.000 to 135.000 hours and are the heaviest pillow block bearings available.

Aluminum Alloy Pulleys: Fan pulleys are constructed of corrosion free aluminum for long life. The aluminum also helps belts last longer.

ATC-DC

DESIGN FEATURES

Water Management
High Efficient Water Saver Drift Eliminators

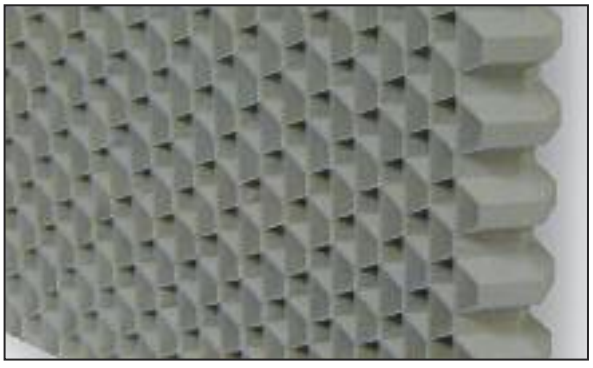
An extremely efficient drift eliminator system is standard on EVAPCO condensers. The patented system removes entrained water droplets from the air stream to limit the drift rate to less than 0.001% of the recirculating water rate. With a low drift rate, EVAPCO condensers save valuable water and water treatment chemicals. The drift eliminators are constructed of an inert polyvinyl chloride (PVC) plastic material which effectively eliminates corrosion of these vital components. They are assembled in sections to facilitate easy removal for inspection of the water distribution system.

Superior WST Air Inlet Louver and Screen Design

EVAPCO's patented WST Inlet Louvers keep water in and sunlight out of the basins of induced draft products. The unique non-planar design is made from lightweight PVC sections which easily fit together and have no loose hardware, enabling easy basin access.

Developed with computational fluid dynamics (CFD) software, the louver's air channels are optimized to maintain fluid dynamic and thermodynamic efficiency and block all line-of-sight paths into the basin eliminating splash-out; even when the fans are off. Additionally, algae growth is minimized by blocking all sunlight.

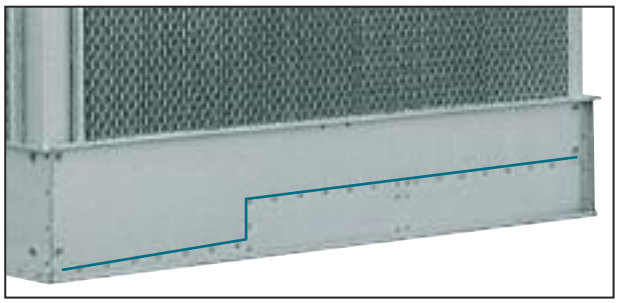
The combination of easy basin access, no splash-out and minimized algae growth saves the end user money on maintenance hours, water consumption and water treatment costs.



Inlet Louver Material

"Clean Pan" Basin Design

EVAPCO condensers feature a completely sloped basin from the upper to lower pan section. This "Clean Pan" design allows the water to be completely drained from the basin. The condenser water will drain from the upper section to the depressed lower basin section where the dirt and debris can be easily flushed out through the drain. This design helps prevent buildup of sedimentary deposits, biological films and minimizes standing water.

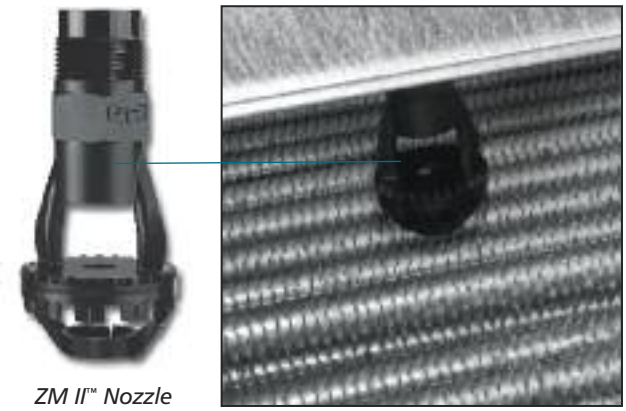


Sloped Basin

Maintenance Free *ZM II*™ Spray Nozzle Water Distribution System

EVAPCO'S Zero Maintenance *ZM II*™ Spray Nozzle remains clog-free while providing even and constant water distribution for reliable, scale-free evaporative cooling under all operating conditions.

The heavy duty nylon *ZM II*™ Spray nozzles have a 33 mm diameter opening and a 38 mm splash plate clearance. Furthermore, the fixed position *ZM II*™ nozzles are mounted in corrosion-free PVC water distribution pipes. Together, these elements combine to provide unequaled coil coverage and scale prevention, and make the industry's best performing non-corrosive, maintenance-free water distribution system.



ZM II™ *Nozzle*

OPTIONAL EQUIPMENT

ATC-DC

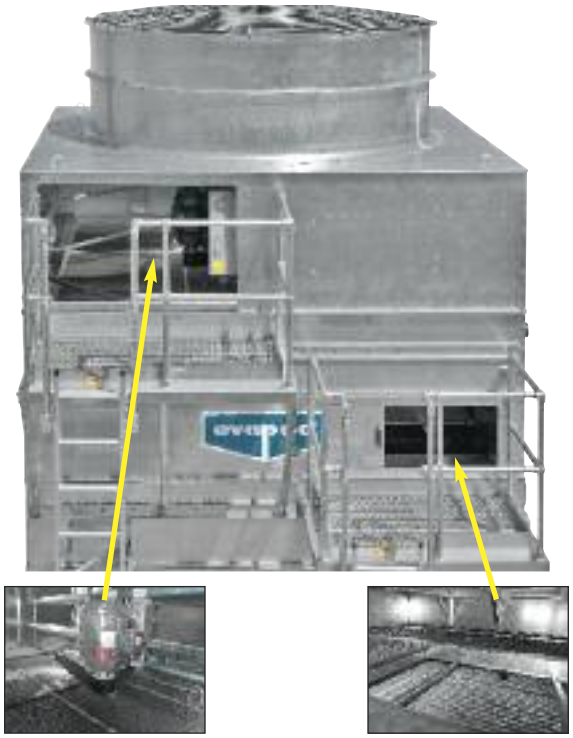
Two Speed Motors

Two speed fan motors can provide an excellent means of capacity control. In periods of lightened loads or reduced wet bulb temperatures, the fans can operate at low speed, which will provide about 60% of full speed capacity, yet consume only about 15% of the power compared with high speed. In addition to the energy savings, the sound levels of the units will be greatly reduced at low speed.

Inverter Duty Motors

Inverter Duty motors are available for cooler applications which utilize variable frequency drive systems for capacity control. Inverter Duty motors offer totally enclosed premium efficiency construction which is designed for variable frequency drive applications.

Note: Other special motor configurations are available to meet specific proper requirements. Contact your local EVAPCO sales representative for application assistance and motor availability.



Working Platform & Ladder with Davit

ATC-DC units are available with self-supported external working platforms and ladders. Two separate platforms will allow easy access to the motor and drive system, water distribution system as well as the **ARID-*fin Pak***™ coil.

The working platforms are constructed of the heavy duty galvanized steel. The CE compliant working platform option uses a straight ladder with safety cage and ships in sections for easy installation.

ATC-DC Hybrid with Working Platform and Ladder with Davit

The optional davit eliminates crane rentals and facilitates the removal of motors and fans. The davit is constructed of aluminum for ease of use. When the davit is ordered, the galvanized steel bracket is mounted on the side of the unit. The Davit ships loose and is installed in the field.

ATC-DC

OPTIONAL EQUIPMENT

EVAPCO Water Systems Solutions

The **ATC-DC** is available with EVAPCO's **Factory Mounted** water treatment systems. EVAPCO offers both a solid chemical and a hybrid solution for water treatment to maintain your heat transfer efficiency and extend the life of the equipment. Each system has been specifically designed for your hybrid condenser.

EVAPCO's Water Systems offer ATC-DC owners a single-source of responsibility for equipment, water treatment, and service. Both Smart Shield® and *Pulse*~Pure® Plus are manufactured and warranted by EVAPCO.

Benefits of adding an EVAPCO water treatment system include:

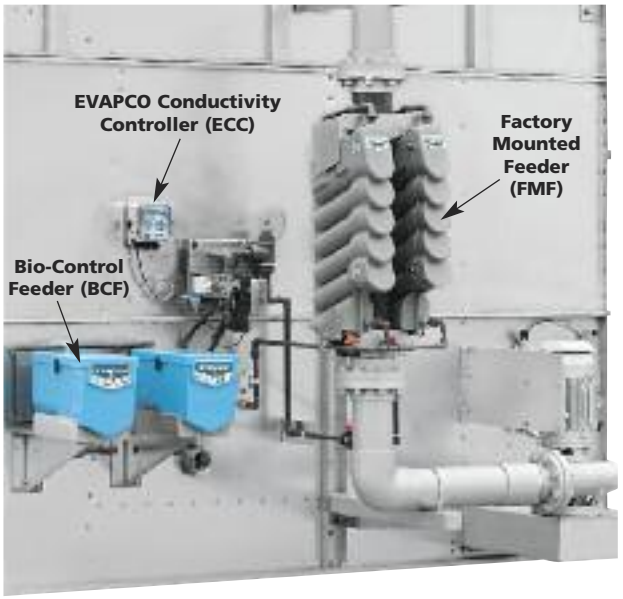
- **SAVE MONEY**
  by simplifying commission:
  - Single power connection is the only field installation requirement
- **Factory Mounting**
  your water treatment system ensures that it is installed to factory specifications.
- **Patented self-draining piping**
  eliminates the need for line insulation and heat tracing above the overflow level.
- **A Factory Authorized Service Partner**
  provides the first year of water system service and monitoring, to ensure proper operation and ongoing success.
- **Conductivity control package**
  maximizes water efficiency and features:
  - Low maintenance non-fouling torodial probe
  - USB port for downloadable 60 day audit trail of system operation
  - Motorized blowdown valve that provides the most reliable bleed control with power open / spring return operation.

OPTIONAL EQUIPMENT

ATC-DC

EVAPCO Water Systems Solutions

Smart Shield® Solid Chemical Water Treatment System



EVAPCO's **Smart Shield®** system utilizes proven solid chemistry delivered via our revolutionary feed system. Patented controlled release scale and corrosion inhibitor is fed whenever your spray water pump is energized, keeping your system protected anytime the spray water pump is operating. **Smart Shield®** is a complete water treatment package that:

- Utilizes 'Bag in Bag' no touch chemical replenishments, making reloads easier and safer.
- Creates reduced packaging, shipping and handling providing a reduced carbon footprint compared to liquid chemicals.
- Eliminates the hazards associated with liquid chemicals, potential for liquid spills and the need for expensive feed pumps making it the easiest and safest chemical water treatment system available today

Watch a short product video at: www.smartshield.evapco.com

Pulse~Pure® PLUS Hybrid Water Treatment System

EVAPCO's ***Pulse*~Pure® PLUS** water treatment system utilizes pulsed electric field technology to provide an environmentally responsible alternative for the treatment of water in evaporative cooled equipment. The ***Pulse*~Pure® PLUS** system delivers short, high-frequency bursts of low energy electromagnetic fields to the recirculating water in the ATC-DC.

- EVAPCO guarantees that total bacterial counts will not exceed 10,000 CFU/ml in the cooling water.
- Controls scale, corrosion, and microbiological growth.
- Compact design with no moving parts and low energy consumption.
- Safe and easy granular biocide eliminates the shipping, handling and storage concerns associated with liquid biocides.

Learn More about *Pulse*~Pure® PLUS online at: www.evapco.com

ATC-DC

APPLICATION

Design

Evapco units are of heavy-duty construction and designed for long trouble-free operation. Proper equipment selection, installation and maintenance is, however, necessary to ensure full unit performance. Some of the major considerations in the application of a cooler are presented below. For additional information, please contact the factory.

Air Circulation

It is important that proper air circulation be provided. The best location is on an unobstructed roof top or on ground level away from walls and other barriers. Those condensers located in wells, enclosures or adjacent to high walls must be properly located to avoid the problems associated with recirculation.
Recirculation raises the wet bulb temperature of the entering air causing the water temperature to rise above the design. For these cases, the discharge of the fan should be located at a height even with the adjacent wall, thereby reducing the chance of recirculation. For additional information, see the Evapco Equipment Layout Manual.
Good engineering practice dictates that the condenser discharge air not be directed or located close to or in the vicinity of building air intakes.

Recirculating Water System

The surest way to protect the recirculating water system from freezing is with a remote sump. The remote sump should be located inside the building and below the unit. When a remote sump arrangement is selected, the spray pump is provided by others and installed at the remote sump. All water in the condenser basin should drain to the remote sump when the spray pump cycles off.
Other freeze protection methods are available when a remote sump is not feasible. Electric pan heaters can be used to keep the pan water from freezing when the unit cycles off. Water lines to and from the unit, spray pump and related piping should be heat traced and insulated up to the overflow level in order to protect from freezing.
The unit should not be operated dry (fans on, pump off) unless the basin is completely drained and the unit has been designed for dry operation. Consult the factory when dry operation is a requirement.

Maintaining the Recirculated Water System

The heat rejection in a ATC-DC condenser is partly accomplished by the evaporation of a portion of the recirculated spray water. As this water evaporates, it leaves behind all of its mineral content and impurities. Therefore, it is important to bleed-off an amount of water equal to that which is evaporated to prevent the build-up of these impurities. If this is not done, the mineral or the acidic nature of the water will continue to increase. This will ultimately result in heavy scaling or a corrosive condition.

Bleed-off

Each unit supplied with a pump mounted on the side is furnished with a bleed line for visual inspection and a valve which, when fully open, will bleed-off the proper amount of water. If the make-up water supplying to the unit is relatively free of impurities, it may be possible to cut back the bleed, but the unit must be checked frequently to make sure scale is not forming. Make-up water pressure should be maintained between 140 and 340 kPa.

Water Treatment

In some cases the make-up water will be so high in mineral content that a normal bleed-off will not prevent scaling. In this case, water treatment will be required and a reputable water treatment company familiar with the local water conditions should be consulted.
Units constructed of galvanized steel operating with circulating water having a pH of 8,3 or higher will require periodic passivation of the galvanized steel to prevent the formation of "white rust".
Any chemical water treatment used must be compatible with the galvanized construction of the unit. If acid is used for treatment, it should be accurately metered and the concentration properly controlled. The pH of the water should be maintained between 7 and 8,8. Batch chemical feeding is not recommended because it does not afford the proper degree of control. If acid cleaning is required, extreme caution must be exercised and only inhibited acids recommended for use with galvanized construction should be used.

Control of Biological Contamination

Water quality should be checked regularly for biological contamination. If biological contamination is detected, a more aggressive water treatment and mechanical cleaning program is required. The water treatment program should be performed in accordance with local legislation and in conjunction with a qualified water treatment company.
It is important that all internal surfaces be kept clean of accumulated dirt or sludge. In addition, the drift eliminators should be kept in good operating condition to minimize water from exiting the condenser unit in the discharge air. To minimize the risk of biological contamination, at initial start up or after an extended shut down, it is recommended that the condenser be properly treated. Clean all debris such as leaves and dirt from the unit. Completely fill the basin to the overflow level with fresh water. Initiate a biocide water treatment or shock treatment program prior to operating the unit. It is preferable that all such procedures be conducted or supervised by a water treatment specialist.

See OPTION Section for EVAPCO's factory installed water treatment solutions.

APPLICATION

ATC-DC

Piping

Evaporative condensers are used in refrigeration systems as an efficient means of heat rejection. Their installation and specifically the installation of the piping to and from the evaporative condenser has a direct effect on their operation and the overall energy efficiency of the refrigeration system. In this manual, we will explore the principles of piping evaporative condensers, beginning with single condensers and exploring multiple condenser installations as well as thermosiphon and sub-cooling piping systems.

Background

Evaporative condensers came into common use for nearly all refrigeration systems because of their operating advantages over the combination of cooling towers and condensers. They, of course, have also replaced the old "once through" water cooled condensing systems which are obsolete today because of the restrictions on the unlimited use of water coupled with its high cost.

Although, shell and tube condensing systems performed the same job of condensing the hot discharge gas into a saturated liquid as evaporative condensers; a small difference in the operating characteristics, namely pressure drop, requires some modification in the refrigerant piping hookup to and from the evaporative condenser. These changes are particularly important when dealing with multiple unit installations. In order to understand why the piping hookup is important, let's first take a brief look at the basic design differences of the two types of condensers to see why there is a difference in the pressure drop characteristics.

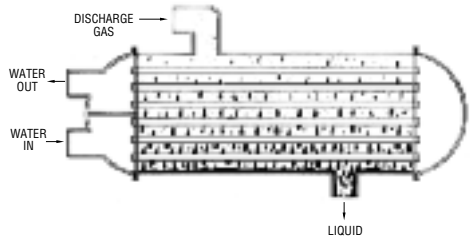


Figure 1

The shell type refrigerant condensers allow the refrigerant to flow around and condense on the outside of the water tubes. (See Figure 1) The refrigerant flow is almost entirely unimpeded resulting in a very low or nearly zero pressure drop through the condenser.

TYPICAL EVAPORATIVE CONDENSER COIL

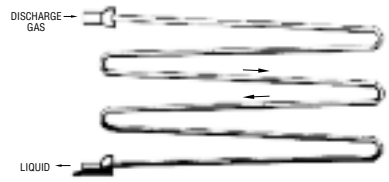


Figure 2

Contrasting, most evaporative condensers (See Figure 2) utilize some type of serpentine coil design where the hot refrigerant gas enters the top of the coil traveling back and forth through several rows as it is cooled and changed from a hot superheated gas to a saturated liquid. This longer travel path generally produces a small pressure drop which, though insignificant to the overall operation of the refrigeration system, does require proper attention be given to the condenser piping. Most of this attention needs to be focused on the liquid drain line from the outlet of the evaporative condenser to the high pressure receiver. The reason for this is described in the "Piping Brochure".

Piping Brochure

For additional information refer to EVAPCO Bulletin 131-E "Piping Evaporative Condensers" or consult your nearest Representative.

Other Useful Manuals available on EVAPCO www.evapco.eu

ATC-DC

APPLICATION

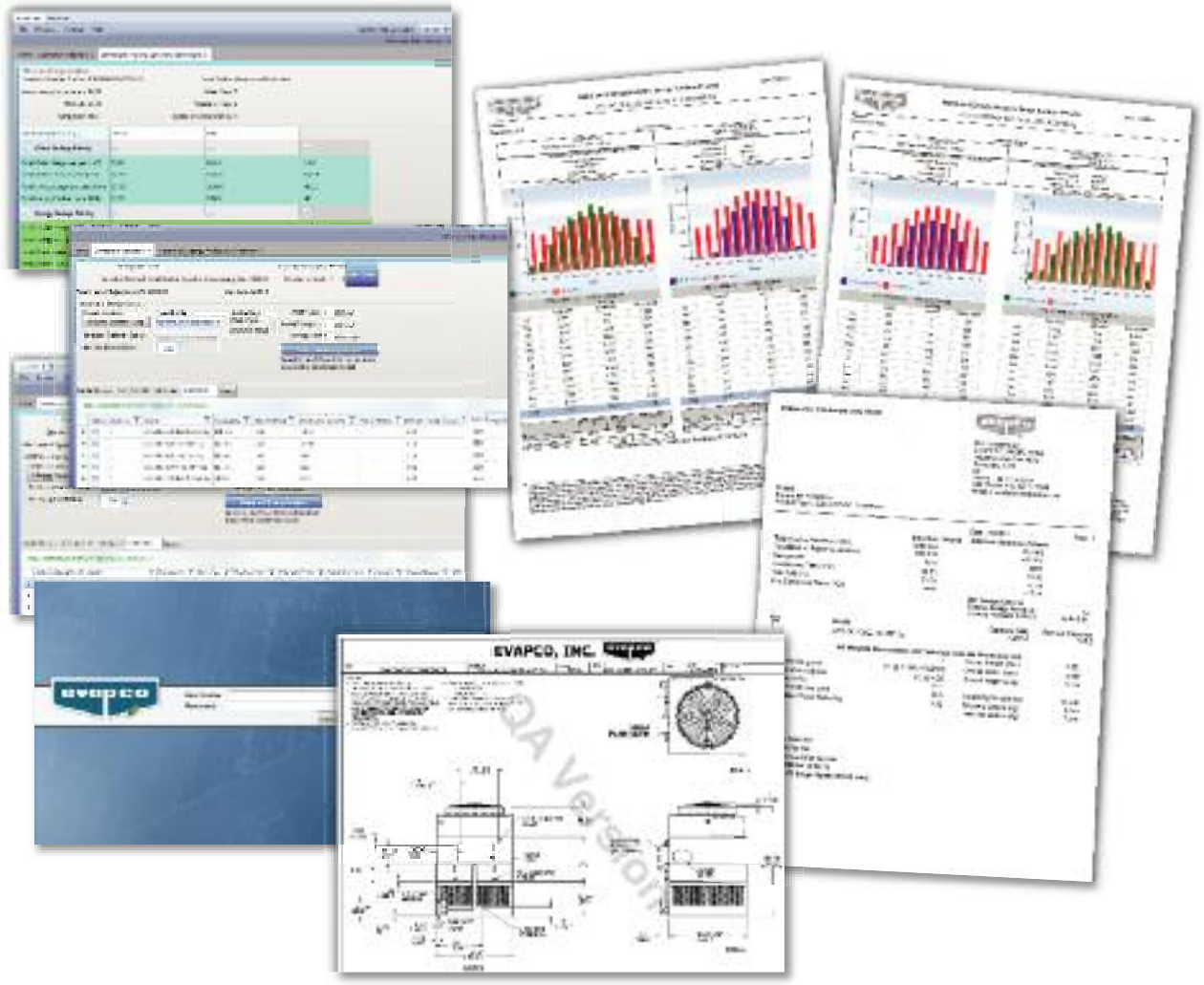
Technical Support Services

EVAPCO's evap*Select*™ Equipment Selection Program

Evap*Select*™ is a Web based computer selection program which allows the design engineer to choose EVAPCO models and optimize unit selections. The program allows the engineer to evaluate the equipment's thermal performance, space, energy requirements and water consumption. Once the model is selected and optional equipment features are inserted, the engineer may output a complete specification **AND** a unit drawing from this program.

The software is designed to provide the user with maximum flexibility in analyzing the various selection parameters while in a friendly and familiar Windows format.

The **Evap*Select*™** software is available to all consulting engineering offices and design-build contractors. The programs are distributed through the local EVAPCO sales representative or the EVAPCO offices.



EVAPCO's Website

Log on to EVAPCO's new and improved website **http://www.evapco.eu** for expanded product information. Product literature, Rigging and Maintenance Instructions are all accessible online from your computer.

The **Evap*Select*™** Equipment Selection Software program may be accessed using Microsoft Internet Explorer after contacting your local EVAPCO sales representative. Users may make Requests for Quotation through the website or by e-mailing EVAPCO at this address:

evapco.europe@evapco.eu

With the Evap*Select*™ program, equipment selections, written specifications, unit drawing files and EVAPCO on-line information are readily available from the comfort of your own office!

ATC-DC

Ultra Quiet Hybrid Condensers

The New EVAPCO ATC-DC condenser are now available with four (4) equipment options to reduce the overall sound generated from the side or top.

Each option provides various levels of sound reduction and can be used in combination to provide the lowest sound level.

Ultra Quiet operation for induced draft counterflow Hybrid Condensers

ATC-DC

ADVANCED TECHNOLOGY LOW SOUND SOLUTIONS

Super Low Sound Solution for Sound Sensitive Applications

Family of Super Low Sound Fans

The Super Low Sound Fan

Reduced Sound Levels versus ATC-DC Standard Fan

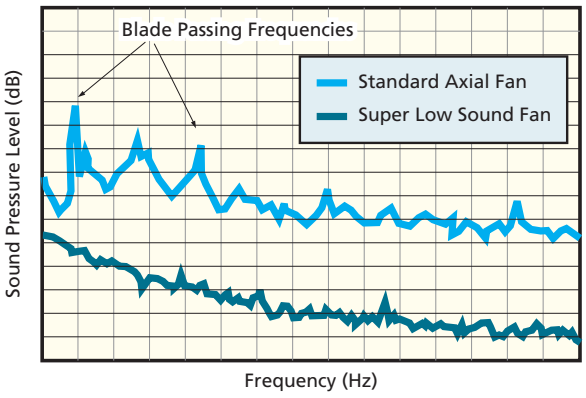
EVAPCO's Super Low Sound Fan on the **ATC-DC** Hybrid Condenser utilizes an extremely wide chord blade design applied for sound sensitive applications where the lowest sound levels are desired. The fan is one piece molded heavy duty FRP construction utilizing a forward swept blade design. The Super Low Sound Fan reduces sound levels 9 to 15 dB(A) compared to the Model **ATC-DC** standard fan.

Improved Sound Quality versus Model ATC-DC Standard Fan

The Super Low Sound Fan on the **ATC-DC** Hybrid Condenser reduces sound levels 9-15 dB(A) and eliminates audible blade passing frequencies indicative of straight bladed axial type fans.

Refer to the Narrow Band Spectrum graph which shows how straight bladed axial fans produce blade passing frequencies – the same phenomena that produce the signature pulsating helicopter noise.

The blade passing frequencies are audible spikes in sound pressure levels, but are not apparent in the octave band sound spectrum.



Narrow Band Spectrum Analysis

*The Super Low Sound Fan on the **ATC-DC** condenser reduces sound levels and betters the sound quality!*

NOTE: These low sound options may impact the overall installed dimensions of the ATC-DC condenser selected.

ADVANCED TECHNOLOGY LOW SOUND SOLUTIONS

ATC-DC

Additional Solutions for Sound Sensitive Applications

Low Sound Fan *4 – 7 dB(A) Reduction!*

The Low Sound Fan offered by EVAPCO is a wide chord blade design for sound sensitive applications where low sound levels are desired. The Low Sound Fan shall utilize a unique soft-connect blade-to-hub design that is compatible with Variable Speed Drives.

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 fans are high efficiency axial propeller type and are available on 2.4 m wide and larger ATC-DC condensers.

Water Silencer

Reduces Water Noise in the Cold Water Basin up to 7 dB(A)!

The water silencer option is available for all induced draft models and is located in the falling water area of the cold water basin. The water silencer will reduce the high frequency noise associated with the falling water and is 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. The water silencers reduce overall sound levels **9 dB(A) to 12 dB(A)** (depending on water loading and louver height) measured 1.5 m from the side or end of the unit when water is circulated with fans off.

The water silencers are constructed of lightweight PVC sections and can be easily removed for access to the basin area. *The water silencer will have no impact on unit thermal performance.*

The Water Silencer is available on ALL ATC-DC condensers.

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 reduce the 15 m free field sound level by an additional **3 db(A)**. The walls are constructed of Z-725 galvanized steel (stainless steel construction also available) lined with acoustical padding on the inside of the walls.

This option requires external support by others.

Consult **Evap*Select*™** software for unit sound levels. If a detailed analysis or full octave band data sheet is required for your application, please consult your EVAPCO Sales Representative.

SOUND

Background in Sound Basics

Sound

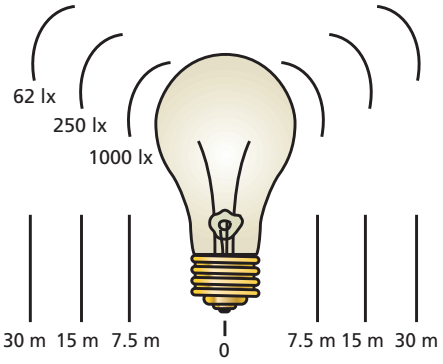
Sound is the alteration in pressure, stress, particle displacement and particle velocity, which is propagated in an elastic material. Audible sound is the sensation produced at the ear by very small pressure fluctuations in the air.

Sound Pressure

Sound pressure is the *intensity* of sound. Sound pressure, L_p in decibels is the ratio of measured pressure, P in the air to a reference sound pressure, $P_o = 2 \times 10^{-5}$ Pascal following the following formula:

L_p (dB) = 10 $\log_{10}$ ($\triangle P^2 / \triangle P_o^2$)

The most important point to understand about sound pressure level is that **sound pressure level is what is actually being measured when sound data is recorded.** Microphones that measure sound are pressure sensitive devices that are calibrated to convert the sound pressure waves into decibels.



"SOUND PRESSURE"

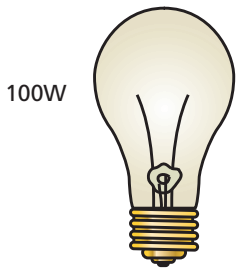
Similar to the intensity coming from a light bulb which gets dimmer as one gets further and further away, sound pressure decreases in decibels as your ear gets further from the sound source.

Sound Power

Sound Power is the *energy* of sound. Sound power, L_w in decibels is the ratio of the calculated sound power, W to a reference power, W_o=1 picowatt, according to the following formula:

L_w (dB) = 10 $\log_{10}$ (W/W_o)

The most important point to remember about **sound power level is that sound power level is not a measured value, but is calculated based on the measured sound pressure.**



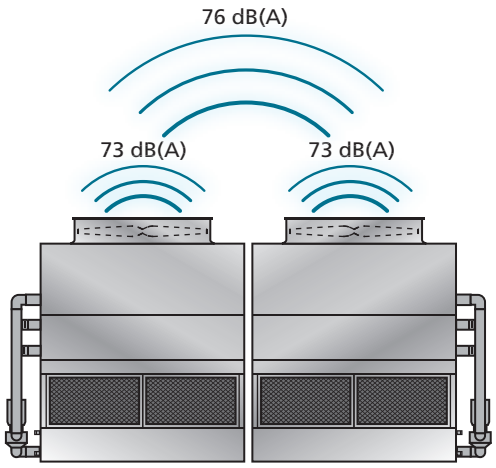
"SOUND POWER"

Similar to the wattage of a light bulb that does not change the farther one is away from the light bulb, sound power does not vary with distance.

Adding Multiple Sound Sources

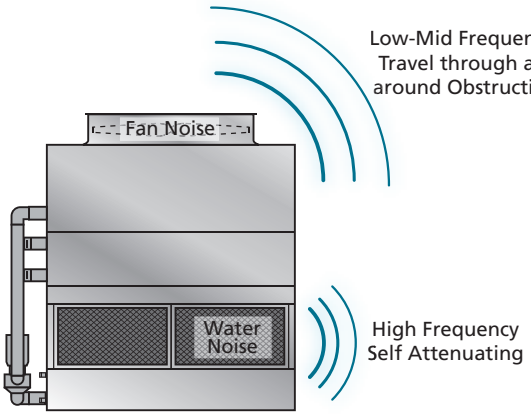
Since the decibel is a logarithmic function, the numbers are not added linearly. Therefore, two 73 dB sound sources added together do not equal 146 dB. The resultant sound would actually be 76 dB. The following table shows how to add decibels from two sound sources.

Difference in dB Level	Add to the higher dB Level
0 to 1	3
2 to 3	2
4 to 8	1
9 or greater	0



Sound Science and Condensers

Sound Frequency



Fan Noise

- Low / Mid frequencies that travel long distances, through walls, and around obstructions.
- Very difficult to attenuate. Reduce fan noise by using Low Sound Fans.
- Dominates what is measured and heard at the condenser and at the sound sensitive location.

Water Noise

- High frequencies that attenuate naturally with distance. Attenuated easily by walls, trees or other obstructions.
- Totally masked and drowned out by fan noise at a short distance away from the condenser.

Sound Pressure – The A-Weighted Scale

The A-weighted scale, dB(A) is a means to translate what a sound meter microphone measures to how the human ear perceives the sound.

dB(A) Formula and Conversions:

$$dB(A) = 10 \log_{10} \sum_{f=63}^{f=8000} 10^{((dB+Cf)/10)}$$

where: C_f = correction factor per band
dB = measured sound pressure
let: $Z_f = (dB + Cf)/10$

Band	Center Freq. (Hz)	Frequency Range (Hz)	Sample Data (dB)	Cf (dB)	Z_f
1	63	44-88	68	-26.2	4.18
2	125	89-175	76	-16.1	5.99
3	250	176-350	77	-8.6	6.84
4	500	351-700	73	-3.2	6.98
5	1000	701-1400	70	0	7.00
6	2000	1401-2800	68	+1.2	6.92
7	4000	2801-5600	71	+1.0	7.20
8	8000	5601-11200	73	-1.1	7.19

Typical Sound Pressure Levels of Well Known Noises:

Jet Airplane, 45 meters away	140 dB(A)
Painful	130 dB(A)
Very Uncomfortable	120 dB(A)
Circular Saw	110 dB(A)
Nightclub	100 dB(A)
Semi Truck	90 dB(A)
Sidewalk of a Busy Road	80 dB(A)
Household Vacuum, 1 meter away	70 dB(A)
Normal Conversation	60 dB(A)
Inside Average Home	50 dB(A)
Quiet Library	40 dB(A)
Bedroom at Night	30 dB(A)

Notable Facts about Sound:

- +/- 1 dB(A) is inaudible to the human ear
- Decreasing a noise source by 10 dB(A) sounds half as loud to the human ear

Example calculation of the dB(A) formula using the Sample Data above.

$dB(A) = 10 \log_{10} \sum 10^{(Z1)} + 10^{(Z2)} + 10^{(Z3)} + 10^{(Z4)} + 10^{(Z5)} + 10^{(Z6)} + 10^{(Z7)} + 10^{(Z8)}$
$= 10 \log_{10} (67114245.2) = 78.3$ dB(A)

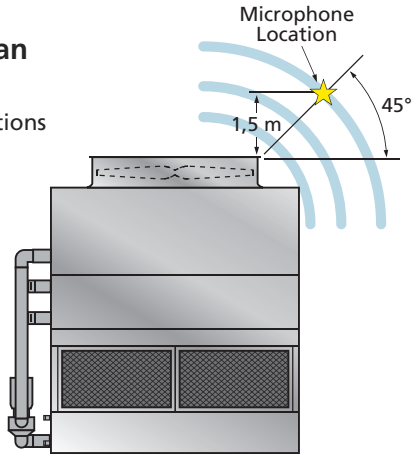
ATC-DC

SPECIFYING SOUND

Sound Verifications

Specify sound pressure in dB(A) measured 1,5 m above the fan discharge during full speed operation.

- All manufacturers can meet a performance specification with Low Sound Options
- Fan noise is what matters. 1,5 m above the fan is where it matters.



Measurement Location

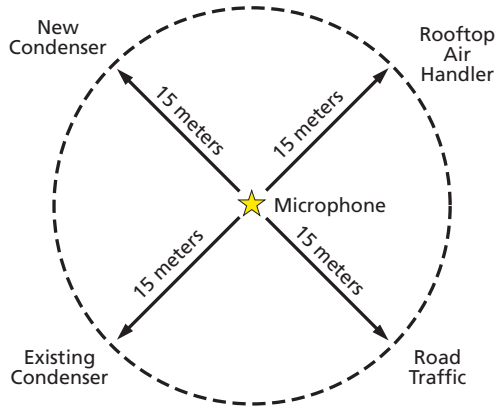
Per Cooling Technology Institute Standard ATC-128

Sound Microphone location 1,5 m above the condenser fan cowl edge at a 45° angle.

This position assures accurate sound measurements by eliminating a source of uncertainty by taking the microphone out of the high velocity fan discharge air.

Easy Verification

At 1,5 m from the condenser, a sound meter records only condenser noise. Interested parties can easily verify the actual noise coming from the condenser against the specified sound data with good certainty.



If sound were specified at 15 meters or some greater distance from the sound sensitive location, there is increased uncertainty in the measured data due to other possible sound sources within the 15 meters radius of the sound microphone.

Sound Quality

Sound coming from the top of the condenser is comprised of low- and mid-frequency fan noise. Low- and mid-frequency fan "rumble" is very difficult to attenuate. Fan rumble travels through everything and around everything and what is audible at any sound sensitive location.

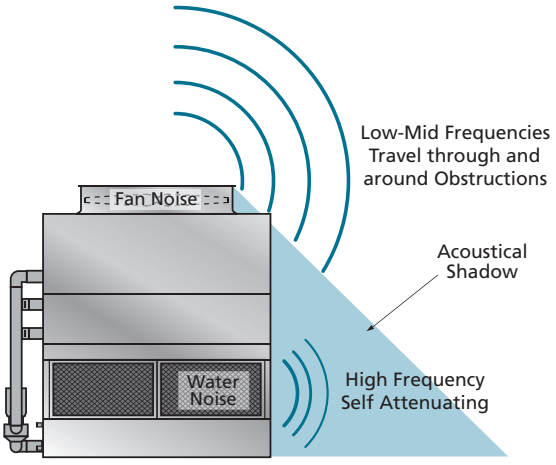
Sound coming from the sides of the condenser is comprised of high frequency water noise, is much less objectionable than fan noise and attenuates naturally with distance.

Acoustical Shadow*

"Subjective reactions to the overall noise generated by condensers indicate that as one walks away from a condenser intake, a point is reached where the water noise is masked by the fan noise. The point coincides with the point at which one emerges from the acoustical shadow of the condenser structure, which shields intake water noise from discharge fan noise."

*Seelbach & Oran, "What To Do About Cooling Tower Noise", Industrial Acoustics Company.

Sound measured at the side of a condenser is inside the acoustical shadow of the noise emitted from the top. Outside the acoustical shadow, the low- and mid-frequency fan noise completely masks the high frequency water noise.



Specify fan noise because it matters! Specify fan noise where it matters!

ATC-DC

We Stand Tall Through it All!

Wind, Rain, Earthquake and Hurricane

The International Building Code (IBC) is a comprehensive set of regulations addressing the structural design and installation requirements for building systems – including HVAC and industrial refrigeration equipment.

With the advent of the IBC, EVAPCO is proud to introduce the new and improved line of ATC-DC Condensers with IBC 2012 compliance standard.

EVAPCO Condensers... designed to withstand seismic or wind load forces.

ATC-DC

IBC COMPLIANCE

In its continuing commitment to be the leaders in evaporative cooling equipment design and services, EVAPCO ATC-DC Hybrid Condensers are now ***Independently Certified*** to withstand Seismic and Wind Loads in accordance with IBC 2012.

What is IBC?

International Building Code

The International Building Code (IBC) is a comprehensive set of regulations addressing both the structural design and the installation requirements for building systems – including HVAC and industrial refrigeration equipment. Compared to previous building codes that considered only the building structure and component anchorage, the requirements contained within the IBC address anchorage, structural integrity, and the operational capability of a component following either a seismic or wind load event. **Simply stated, the IBC code provisions require that evaporative cooling equipment, and all other components permanently installed on a structure, must be designed to meet the same seismic or wind load forces as the building to which they are attached.**

How Does IBC 2012 Apply to Condensers?

Based on site design factors, calculations are made to determine the equivalent seismic "g force" and wind load (kilo-Newton per square meter, kN/m²) on the unit. The closed circuit cooler must be designed to withstand the greater of either the seismic or wind load.

The New ATC-DC is offered with a choice of TWO structural design packages:

- **Standard Structural Design** – For projects with ≤1.0g seismic or 6,94 kN/m² wind loads
- **Upgraded Structural Design** – Required for projects with >1.0 g seismic or 6,94 kN/m² wind loads

All locations with design criteria resulting in a seismic design force of up to 1.0g or a wind load of 6,94 kN/m² or below will be provided with the standard ATC-DC structural design. An upgraded structural design is available for installations with design criteria resulting in "g forces" greater than 1.0g. The highest "g force" location in North America is 5.12g. The highest wind load shown on the maps is 273 km/h, which is approximately equal to 6,94 kN/m² velocity pressure. **Therefore, the upgraded structural design package option for the new ATC-DC is designed for 5.12 g and 6,94 kN/m² making it applicable to most building locations worldwide.**

Design Implementation

EVAPCO applies the seismic design and wind load information provided for the project to determine the equipment design necessary to meet IBC requirements. This process ensures that the mechanical equipment and its components are compliant per the provisions of the IBC as given in the plans and specifications for the project.

Independent Certification

Although the IBC references and is based on the structural building code ASCE 7, many chapters and paragraphs of ASCE 7 are superceded by the IBC, independent certification and methods of analysis are such paragraphs. Per the most recent edition of the code, the EVAPCO compliance process included an exhaustive analysis by an independent approval agency. As required by the International Building Code, EVAPCO supplies a certificate of compliance as part of its submittal documents. The certificate of compliance demonstrates that the equipment has been independently tested and analyzed in accordance with the IBC seismic and wind load requirements. Evapco has worked closely with the independent approval agency, The VMC Group, to complete the independent equipment testing and analysis.

If the seismic "g force" or wind load kN/m² requirements for the project site are known, EVAPCO's online equipment selection software, **Evap*Select*™**, will allow you to choose the required structural design package – either standard construction or upgraded construction.

For further questions regarding IBC compliance, please contact your local EVAPCO Representative.


evapco

Certificate of Compliance

AT, USS, UAT, UT Cooling Towers
eco-ATW/WE, ATW(B) and ESWA Closed Circuit Coolers
eco-ATC, ATC-E Evaporative Condensers

Are certified to meet or exceed the Seismic and Wind Load Provisions set forth in the applicable building codes for this project.

These products have been manufactured following all applicable quality assurance programs.

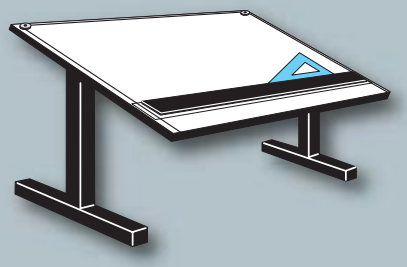
Applicable Building Codes:
IBC 2012
ASCE-7
NFPA 5000

Referenced Report:
VMA-43387

Approval Agency:
VMC Seismic Consulting Group

EVAPCO...Specialists in Heat Transfer Products and Services.

ATC-DC

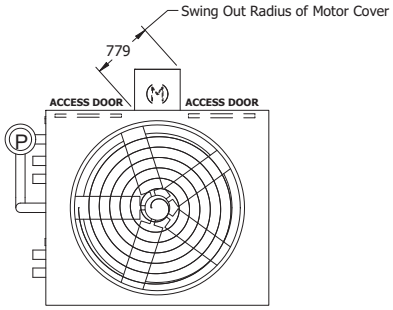


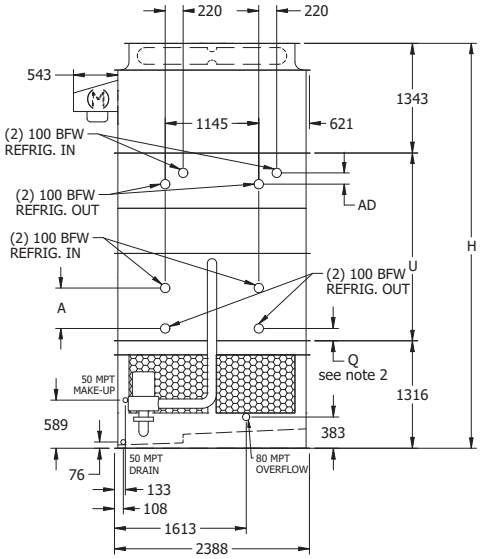
Engineering Data & Dimensions

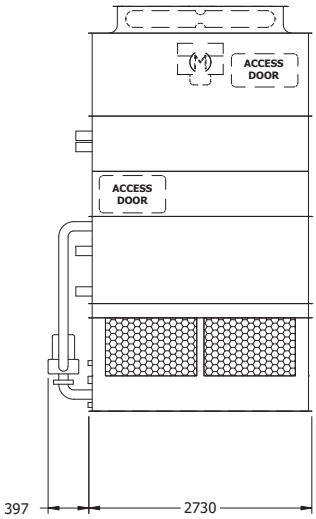
ATC-DC Models 89G-25 to 89J-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak*™** Dry Coil outlets and **Ellipti-*fin*®** Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.







Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump ✦			Dimensions (mm) ▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	m³/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-89G-25-1EF	351	17,2	23,4	4	15	2820	1250	3920	516	32	1,5	910	200	3330	4610	1951	140	140
ATC-DC-89G-35-1EF	358	18,6	24,3	4	14,9	2820	1250	3920	666	34	1,5	910	200	3330	4610	1951	140	175
ATC-DC-89H-25-1EF	387	17,0	23,2	5,5	17,2	2850	1250	3940	516	32	1,5	910	200	3350	4610	1951	140	140
ATC-DC-89H-35-1EF	395	18,7	24,4	5,5	17	2850	1250	3940	666	34	1,5	910	200	3350	4610	1951	140	175
ATC-DC-89I-25-1EF	415	16,8	23,1	7,5	18,9	2850	1250	3940	516	32	1,5	910	200	3360	4610	1951	140	140
ATC-DC-89I-35-1EF	423	18,7	24,4	7,5	18,7	2850	1250	3940	666	34	1,5	910	200	3360	4610	1951	140	175
ATC-DC-89J-25-1EF	451	16,7	23,0	11	21,6	2910	1250	4010	516	32	1,5	910	200	3420	4610	1951	140	140
ATC-DC-89J-35-1EF	459	18,9	24,5	11	21,4	2910	1250	4010	666	34	1,5	910	200	3420	4610	1951	140	175
ATC-DC-89G-25-2EF	464	12,4	20,2	4	14,7	3650	2080	4770	718	54	1,5	910	200	4180	4775	2116	305	140
ATC-DC-89G-35-2EF	472	13,4	20,8	4	14,6	3650	2080	4770	861	57	1,5	910	200	4180	4775	2116	305	175
ATC-DC-89H-25-2EF	511	12,4	20,2	5,5	16,8	3680	2080	4800	718	54	1,5	910	200	4210	4775	2116	305	140
ATC-DC-89H-35-2EF	521	13,7	21,0	5,5	16,7	3680	2080	4800	861	57	1,5	910	200	4210	4775	2116	305	175
ATC-DC-89I-25-2EF	546	12,4	20,2	7,5	18,5	3680	2080	4800	718	54	1,5	910	200	4220	4775	2116	305	140
ATC-DC-89I-35-2EF	556	13,9	21,2	7,5	18,3	3680	2080	4800	861	57	1,5	910	200	4220	4775	2116	305	175
ATC-DC-89J-25-2EF	594	12,4	20,2	11	21,2	3740	2080	4860	718	54	1,5	910	200	4280	4775	2116	305	140
ATC-DC-89J-35-2EF	605	14,3	21,4	11	21	3740	2080	4860	861	57	1,5	910	200	4280	4775	2116	305	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

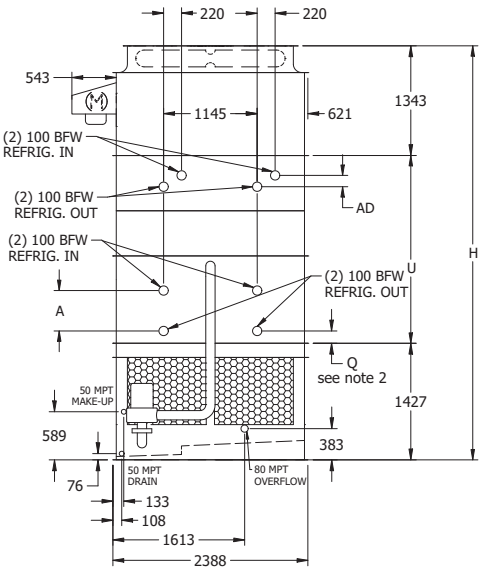
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

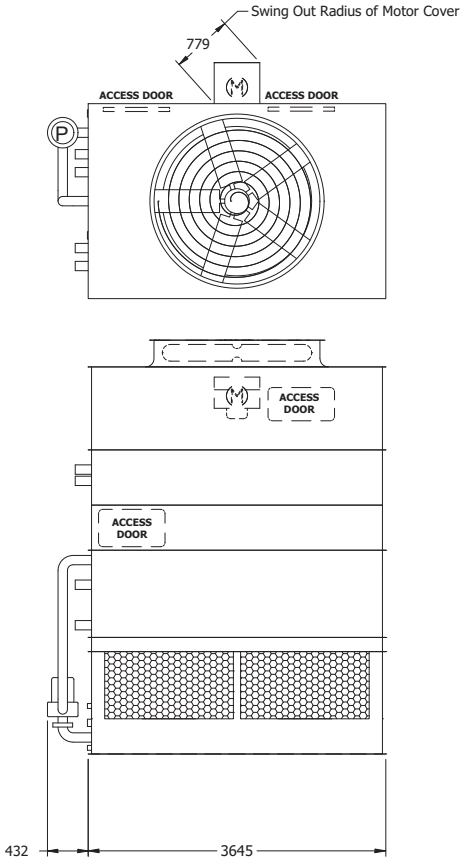
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

ATC-DC Models 812H-25 to 812K-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak***™ Dry Coil outlets and **Ellipti-*fin***® Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.





Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump ✦			Dimensions (mm) ▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	m³/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-812H-25-1EF	491	16,8	23,1	5,5	20,7	3510	1540	5040	703	43	2,2	1210	250	4260	4721	1951	140	140
ATC-DC-812H-35-1EF	501	18,3	24,1	5,5	20,5	3510	1540	5040	891	46	2,2	1210	250	4260	4721	1951	140	175
ATC-DC-812I-25-1EF	529	16,6	23,0	7,5	22,8	3520	1540	5050	703	43	2,2	1210	250	4270	4721	1951	140	140
ATC-DC-812I-35-1EF	539	18,3	24,1	7,5	22,6	3520	1540	5050	891	46	2,2	1210	250	4270	4721	1951	140	175
ATC-DC-812J-25-1EF	576	16,5	22,9	11	26	3580	1540	5110	703	43	2,2	1210	250	4330	4721	1951	140	140
ATC-DC-812J-35-1EF	587	18,5	24,2	11	25,8	3580	1540	5110	891	46	2,2	1210	250	4330	4721	1951	140	175
ATC-DC-812K-25-1EF	608	16,5	22,9	15	28,7	3610	1540	5130	703	43	2,2	1210	250	4360	4721	1951	140	140
ATC-DC-812K-35-1EF	619	18,8	24,4	15	28,5	3610	1540	5130	891	46	2,2	1210	250	4360	4721	1951	140	175
ATC-DC-812H-25-2EF	646	12,1	20,0	5,5	20,3	4570	2600	6130	935	70	2,2	1210	250	5350	4886	2116	305	140
ATC-DC-812H-35-2EF	658	13,1	20,6	5,5	20,1	4570	2600	6130	1122	73	2,2	1210	250	5350	4886	2116	305	175
ATC-DC-812I-25-2EF	698	11,9	19,8	7,5	22,4	4580	2600	6130	935	70	2,2	1210	250	5360	4886	2116	305	140
ATC-DC-812I-35-2EF	711	13,2	20,7	7,5	22,2	4580	2600	6130	1122	73	2,2	1210	250	5360	4886	2116	305	175
ATC-DC-812J-25-2EF	754	12,2	20,0	11	25,5	4640	2600	6190	935	70	2,2	1210	250	5410	4886	2116	305	140
ATC-DC-812J-35-2EF	768	13,7	21,1	11	25,3	4640	2600	6190	1122	73	2,2	1210	250	5410	4886	2116	305	175
ATC-DC-812K-25-2EF	802	12,2	20,1	15	28,2	4660	2600	6220	935	70	2,2	1210	250	5440	4886	2116	305	140
ATC-DC-812K-35-2EF	817	14,0	21,3	15	27,9	4660	2600	6220	1122	73	2,2	1210	250	5440	4886	2116	305	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

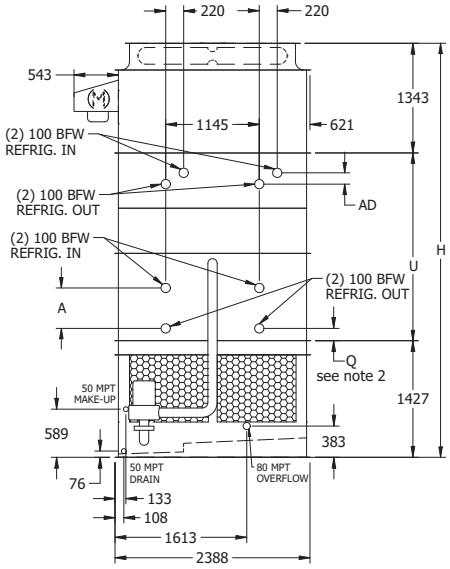
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

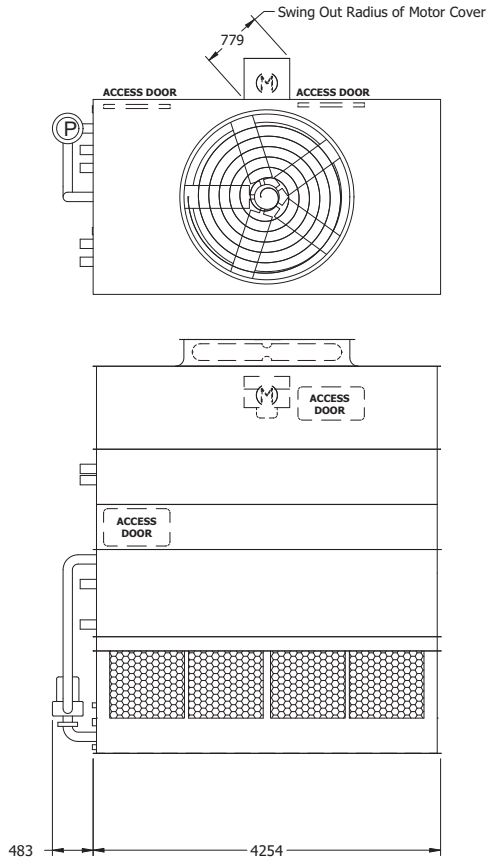
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

ATC-DC
814I-25 to 814K-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak*™** Dry Coil outlets and **Ellipti-*fin*®** Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.





Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump✦			Dimensions (mm) ▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	m³/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-814I-25-1EF	589	17,0	23,2	7,5	25,5	3920	1780	5700	801	48	4	1365	250	4770	4721	1951	140	140
ATC-DC-814I-35-1EF	600	18,6	24,3	7,5	25,3	3920	1780	5700	1025	52	4	1365	250	4770	4721	1951	140	175
ATC-DC-814J-25-1EF	642	16,9	23,2	11	29,2	3970	1780	5750	801	48	4	1365	250	4830	4721	1951	140	140
ATC-DC-814J-35-1EF	654	18,8	24,4	11	29	3970	1780	5750	1025	52	4	1365	250	4830	4721	1951	140	175
ATC-DC-814K-25-1EF	682	16,8	23,1	15	32	4000	1780	5780	801	48	4	1365	250	4860	4721	1951	140	140
ATC-DC-814K-35-1EF	695	18,9	24,5	15	31,7	4000	1780	5780	1025	52	4	1365	250	4860	4721	1951	140	175
ATC-DC-814I-25-2EF	776	12,4	20,1	7,5	25	5100	2960	6910	1078	80	4	1365	250	5990	4886	2116	305	140
ATC-DC-814I-35-2EF	790	13,5	20,9	7,5	24,8	5100	2960	6910	1310	83	4	1365	250	5990	4886	2116	305	175
ATC-DC-814J-25-2EF	849	12,4	20,2	11	28,7	5160	2960	6970	1078	80	4	1365	250	6040	4886	2116	305	140
ATC-DC-814J-35-2EF	865	13,9	21,1	11	28,4	5160	2960	6970	1310	83	4	1365	250	6040	4886	2116	305	175
ATC-DC-814K-25-2EF	901	12,4	20,2	15	31,4	5180	2960	7000	1078	80	4	1365	250	6070	4886	2116	305	140
ATC-DC-814K-35-2EF	918	14,1	21,3	15	31,1	5180	2960	7000	1310	83	4	1365	250	6070	4886	2116	305	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

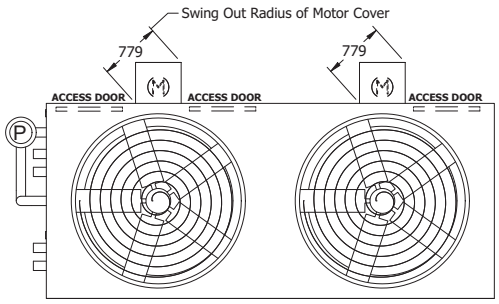
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

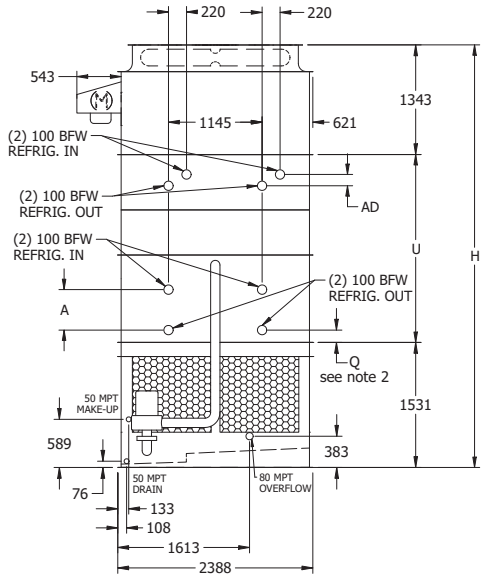
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

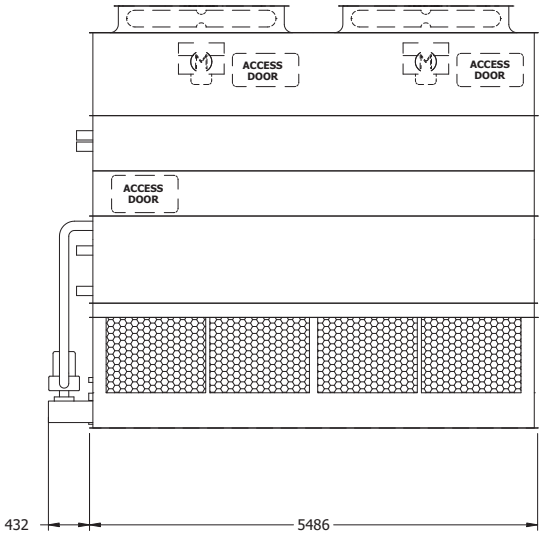
ATC-DC Models 818G-25 to 818J-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak*™** Dry Coil outlets and **Ellipti-*fin*®** Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.







Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump✦			Dimensions (mm)▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	Total m^3/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-818G-25-1EF	737	16,4	22,8	(2) 4	30	5360	2240	7690	1010	59	4	1815	300	6530	4823	1949	140	140
ATC-DC-818G-35-1EF	750	17,8	23,8	(2) 4	29,7	5360	2240	7690	1317	64	4	1815	300	6530	4823	1949	140	175
ATC-DC-818H-25-1EF	810	16,2	22,7	(2) 5.5	34,3	5410	2240	7730	1010	59	4	1815	300	6580	4823	1949	140	140
ATC-DC-818H-35-1EF	825	18,0	23,9	(2) 5.5	34	5410	2240	7730	1317	64	4	1815	300	6580	4823	1949	140	175
ATC-DC-818I-25-1EF	871	16,0	22,6	(2) 7.5	37,7	5420	2240	7750	1010	59	4	1815	300	6590	4823	1949	140	140
ATC-DC-818I-35-1EF	887	17,9	23,9	(2) 7.5	37,4	5420	2240	7750	1317	64	4	1815	300	6590	4823	1949	140	175
ATC-DC-818J-25-1EF	940	16,0	22,5	(2) 11	43	5540	2240	7870	1010	59	4	1815	300	6710	4823	1949	140	140
ATC-DC-818J-35-1EF	958	18,2	24,0	(2) 11	42,6	5540	2240	7870	1317	64	4	1815	300	6710	4823	1949	140	175
ATC-DC-818G-25-2EF	970	15,4	22,2	(2) 4	29,4	6910	3790	9280	1347	100	4	815	300	8130	4988	2114	305	140
ATC-DC-818G-35-2EF	989	16,5	22,9	(2) 4	29,1	6910	3790	9280	105	1661	4	1815	300	8130	4988	2114	305	175
ATC-DC-818H-25-2EF	1070	15,0	21,9	(2) 5.5	33,6	6960	3790	9330	1347	100	4	1815	300	8170	4988	2114	305	140
ATC-DC-818H-35-2EF	1090	16,4	22,9	(2) 5.5	33,3	6960	3790	9330	1661	105	4	1815	300	8170	4988	2114	305	175
ATC-DC-818I-25-2EF	1144	14,9	21,9	(2) 7.5	37	6980	3790	9350	1347	100	4	1815	300	8180	4988	2114	305	140
ATC-DC-818I-35-2EF	1165	16,5	22,9	(2) 7.5	36,6	6980	3790	9350	1661	105	4	1815	300	8180	4988	2114	305	175
ATC-DC-818J-25-2EF	1239	14,7	21,7	(2) 11	42,1	7100	3790	9470	1347	100	4	1815	300	8310	4988	2114	305	140
ATC-DC-818J-35-2EF	1262	16,5	22,9	(2) 11	41,7	7100	3790	9470	1661	105	4	1815	300	8310	4988	2114	305	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

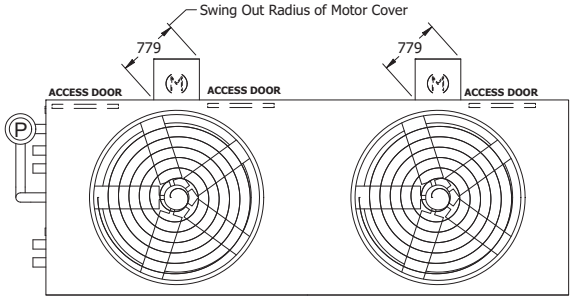
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

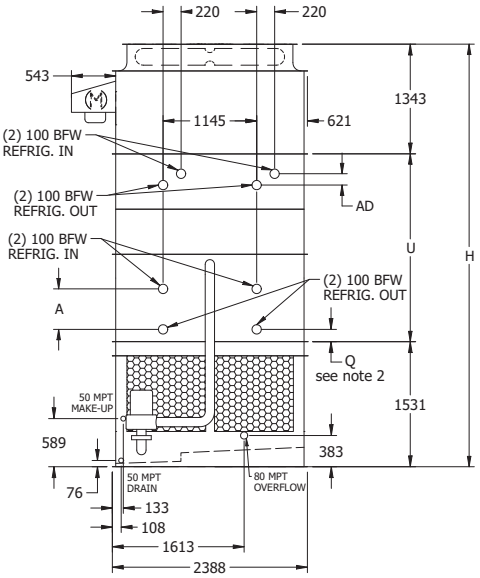
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

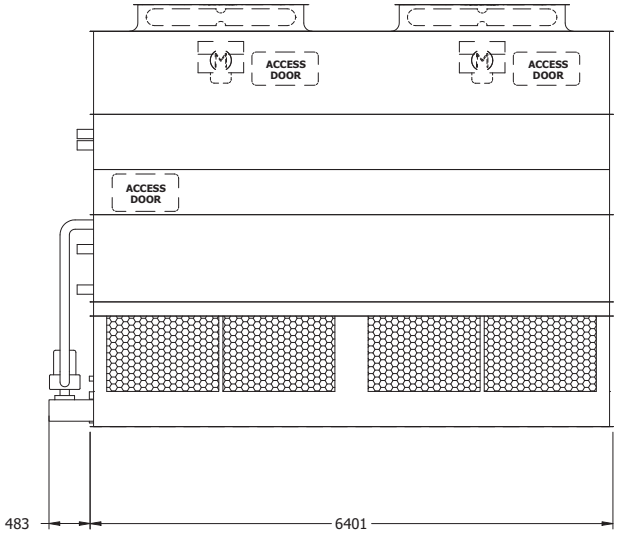
ATC-DC Models 821H-25 to 821I-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak*™** Dry Coil outlets and **Ellipti-*fin*®** Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.







Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump✦			Dimensions (mm)▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	Total m^3/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-821H-25-1EF	996	15,2	22,0	(2) 5.5	40	6060	2560	8840	1167	70	5,5	2120	300	7480	4823	1949	140	140
ATC-DC-821H-35-1EF	1015	17,0	23,2	(2) 5.5	39,6	6060	2560	8840	1519	76	5,5	2120	300	7480	4823	1949	140	175
ATC-DC-821I-25-1EF	1083	15,0	21,9	(2) 7.5	45,3	6080	2560	8850	1167	70	5,5	2120	300	7500	4823	1949	140	140
ATC-DC-821I-35-1EF	1104	17,1	23,3	(2) 7.5	44,8	6080	2560	8850	1519	76	5,5	2120	300	7500	4823	1949	140	175
ATC-DC-821J-25-1EF	1079	15,8	22,4	(2) 11	48,1	6200	2560	8970	1167	70	5,5	2120	300	7620	4823	1949	140	140
ATC-DC-821J-35-1EF	1099	17,9	23,9	(2) 11	47,6	6200	2560	8970	1519	76	5,5	2120	300	7620	4823	1949	140	175
ATC-DC-821H-25-2EF	1313	10,2	18,7	(2) 5.5	39,3	7780	4280	10600	1594	115	5,5	2120	300	9250	4988	2114	305	140
ATC-DC-821H-35-2EF	1338	11,5	19,6	(2) 5.5	38,9	7780	4280	10600	1946	121	5,5	2120	300	9250	4988	2114	305	175
ATC-DC-821I-25-2EF	1430	10,2	18,7	(2) 7.5	44,4	7800	4280	10620	1594	115	5,5	2120	300	9260	4988	2114	305	140
ATC-DC-821I-35-2EF	1457	11,8	19,8	(2) 7.5	44	7800	4280	10620	1946	121	5,5	2120	300	9260	4988	2114	305	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

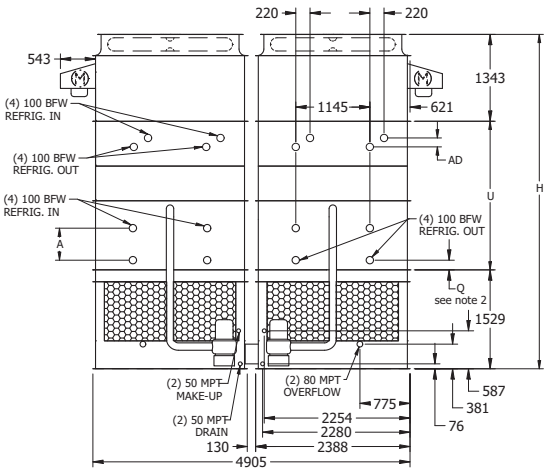
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

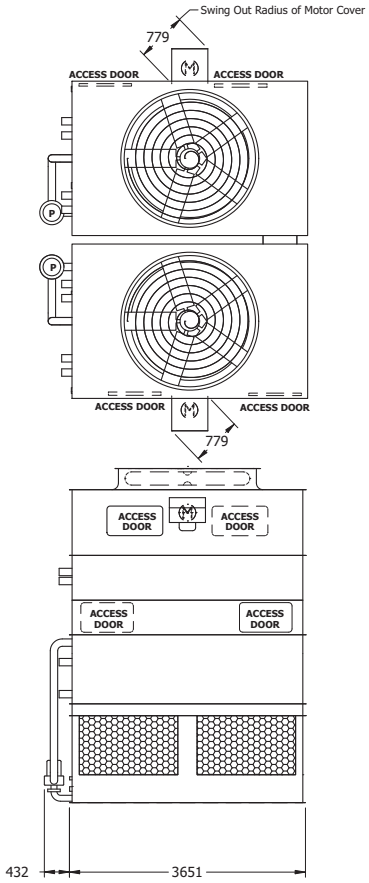
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

ATC-DC Models 1612H-25 to 1612K-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak*™** Dry Coil outlets and **Ellipti-*fin*®** Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.





Model No.	Capacity (kW)	Dry Switch Temper. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump✦			Dimensions (mm) ▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	Total m^3/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-1612H-25-1EF	983	16,8	23,1	(2) 5.5	41,4	6960	1510	10510	988	85	(2) 2.2	2425	(2) 250	8960	4823	1951	140	140
ATC-DC-1612H-35-1EF	1001	18,3	24,1	(2) 5.5	41,8	6960	1510	10510	1175	91	(2) 2.2	2425	(2) 250	8960	4823	1951	140	175
ATC-DC-1612J-25-1EF	1152	16,5	22,9	(2) 11	52,1	7100	1510	10650	988	85	(2) 2.2	2425	(2) 250	9090	4823	1951	140	140
ATC-DC-1612J-35-1EF	1174	18,5	24,2	(2) 11	51,6	7100	1510	10650	1175	91	(2) 2.2	2425	(2) 250	9090	4823	1951	140	175
ATC-DC-1612K-25-1EF	1216	16,5	22,9	(2) 15	57,5	7160	1510	10700	988	85	(2) 2.2	2425	(2) 250	9150	4823	1951	140	140
ATC-DC-1612K-35-1EF	1239	18,8	24,4	(2) 15	56,9	7160	1510	10700	1175	91	(2) 2.2	2425	(2) 250	9150	4823	1951	140	175
ATC-DC-1612H-25-2EF	1282	12,2	20,1	(2) 5.5	40,6	9110	2590	12710	1444	140	(2) 2.2	2425	(2) 250	11160	4988	2116	305	140
ATC-DC-1612H-35-2EF	1307	13,3	20,7	(2) 5.5	40,2	9110	2590	12710	1631	146	(2) 2.2	2425	(2) 250	11160	4988	2116	305	175
ATC-DC-1612I-25-2EF	1378	12,2	20,0	(2) 7.5	44,8	9120	2590	12730	1444	140	(2) 2.2	2425	(2) 250	11180	4988	2116	305	140
ATC-DC-1612I-35-2EF	1404	13,4	20,9	(2) 7.5	44,3	9120	2590	12730	1631	146	(2) 2.2	2425	(2) 250	11180	4988	2116	305	175
ATC-DC-1612J-25-2EF	1512	12,1	20,0	(2) 11	51,1	9240	2590	12850	1444	140	(2) 2.2	2425	(2) 250	11290	4988	2116	305	140
ATC-DC-1612J-35-2EF	1541	13,7	21,0	(2) 11	50,5	9240	2590	12850	1631	146	(2) 2.2	2425	(2) 250	11290	4988	2116	305	175
ATC-DC-1612K-25-2EF	1590	12,4	20,2	(2) 15	56,4	9300	2590	12900	1444	140	(2) 2.2	2425	(2) 250	11350	4988	2116	305	140
ATC-DC-1612K-35-2EF	1620	14,2	21,4	(2) 15	55,8	9300	2590	12900	1631	146	(2) 2.2	2425	(2) 250	11350	4988	2116	305	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

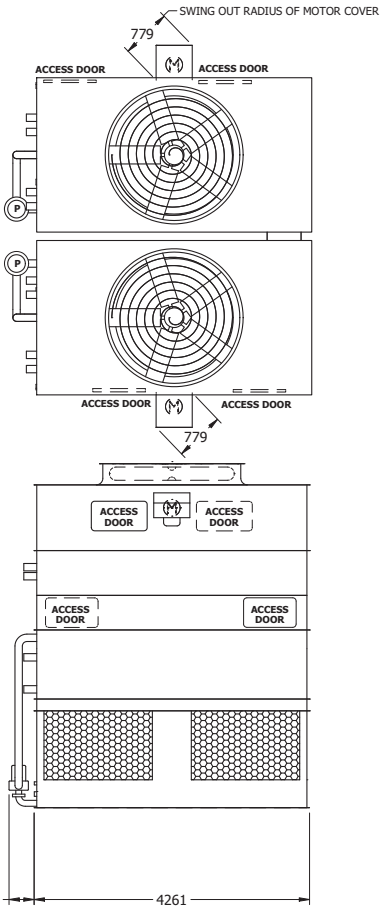
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

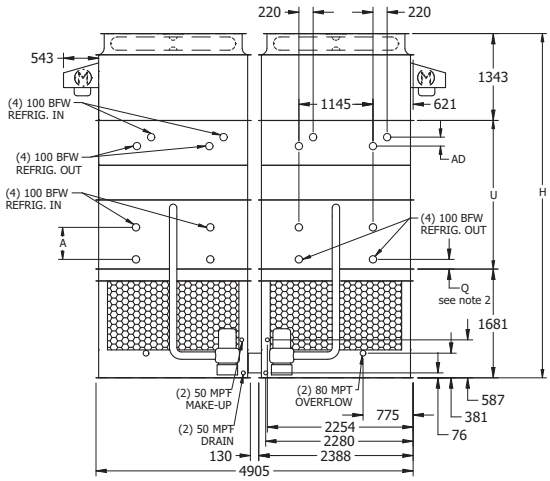
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

ATC-DC Models 1614I-25 to 1614K-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak*™** Dry Coil outlets and **Ellipti-*fin*®** Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.





Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump✦			Dimensions (mm) ▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	Total m^3/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-1614I-25-1EF	1178	17,0	23,2	(2) 7.5	51,1	7780	1750	11920	1108	96	(2) 4	2725	(2) 250	10070	4975	1951	140	140
ATC-DC-1614I-35-1EF	1201	18,6	24,3	(2) 7.5	50,6	7780	1750	11920	1340	103	(2) 4	2725	(2) 250	10070	4975	1951	140	175
ATC-DC-1614J-25-1EF	1284	16,9	23,2	(2) 11	58,5	7890	1750	12030	1108	96	(2) 4	2725	(2) 250	10190	4975	1951	140	140
ATC-DC-1614J-35-1EF	1308	18,8	24,4	(2) 11	57,9	7890	1750	12030	1340	103	(2) 4	2725	(2) 250	10190	4975	1951	140	175
ATC-DC-1614K-25-1EF	1365	16,8	23,1	(2) 15	64	7940	1750	12090	1108	96	(2) 4	2725	(2) 250	10240	4975	1951	140	140
ATC-DC-1614K-35-1EF	1390	18,9	24,5	(2) 15	63,4	7940	1750	12090	1340	103	(2) 4	2725	(2) 250	10240	4975	1951	140	175
ATC-DC-1614I-25-2EF	1534	12,6	20,3	(2) 7.5	50,1	10160	2950	14370	1676	160	(2) 4	2725	(2) 250	12530	5140	2116	305	140
ATC-DC-1614I-35-2EF	1563	13,7	21,1	(2) 7.5	49,6	10160	2950	14370	1901	167	(2) 4	2725	(2) 250	12530	5140	2116	305	175
ATC-DC-1614J-25-2EF	1677	12,7	20,4	(2) 11	57,3	10280	2950	14490	1676	160	(2) 4	2725	(2) 250	12640	5140	2116	305	140
ATC-DC-1614J-35-2EF	1708	14,1	21,3	(2) 11	56,8	10280	2950	14490	1901	167	(2) 4	2725	(2) 250	12640	5140	2116	305	175
ATC-DC-1614K-25-2EF	1789	12,6	20,3	(2) 15	62,7	10340	2950	14550	1676	160	(2) 4	2725	(2) 250	12700	5140	2116	305	140
ATC-DC-1614K-35-2EF	1823	14,2	21,4	(2) 15	62,1	10340	2950	14550	1901	167	(2) 4	2725	(2) 250	12700	5140	2116	305	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

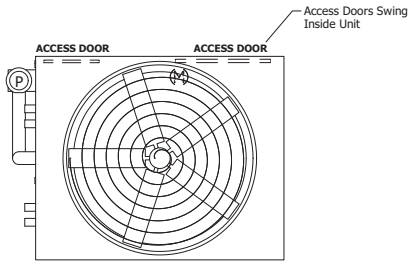
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

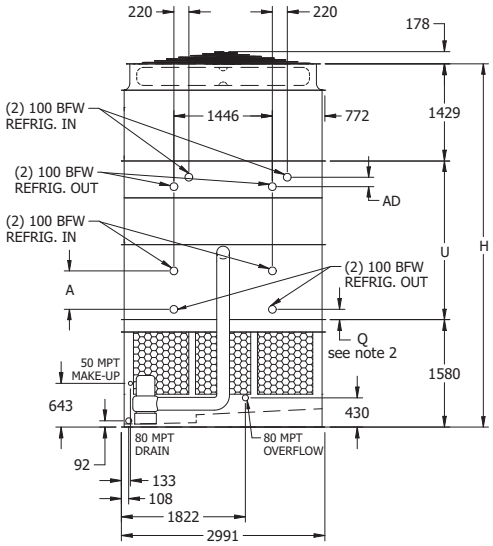
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

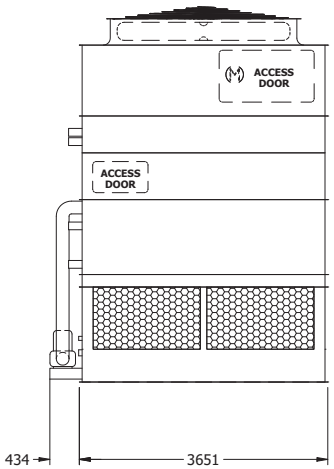
ATC-DC Models 1012I-25 to 1012L-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak***™ Dry Coil outlets and **Ellipti-*fin***® Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.







Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump ✦			Dimensions (mm) ▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	m³/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-1012I-25-1EF	819	10,4	18,9	7,5	25,5	4710	2340	7050	868	54	4	1590	300	5350	4918	1909	140	140
ATC-DC-1012I-35-1EF	834	12,3	20,1	7,5	25,2	4710	2340	7050	1137	58	4	1590	300	5350	4918	1909	140	175
ATC-DC-1012J-25-1EF	901	10,3	18,8	11	29,2	4770	2340	7110	868	54	4	1590	300	5410	4918	1909	140	140
ATC-DC-1012J-35-1EF	918	12,6	20,3	11	28,9	4770	2340	7110	1137	58	4	1590	300	5410	4918	1909	140	175
ATC-DC-1012K-25-1EF	953	10,4	18,8	15	32,1	4800	2340	7140	868	54	4	1590	300	5440	4918	1909	140	140
ATC-DC-1012K-35-1EF	971	12,9	20,5	15	31,8	4800	2340	7140	1137	58	4	1590	300	5440	4918	1909	140	175
ATC-DC-1012L-25-1EF	992	10,4	18,9	18,5	34,6	4810	2340	7160	868	54	4	1590	300	5450	4918	1909	140	140
ATC-DC-1012L-35-1EF	1011	13,2	20,7	18,5	34,2	4810	2340	7160	1137	58	4	1590	300	5450	4918	1909	140	175
ATC-DC-1012I-25-2EF	992	6,5	16,2	7,5	25	6050	3680	8430	1182	90	4	1590	300	6730	5128	2119	349	140
ATC-DC-1012I-35-2EF	1011	7,6	17,0	7,5	24,7	6050	3680	8430	1452	94	4	1590	300	6730	5128	2119	349	175
ATC-DC-1012J-25-2EF	1087	6,7	16,4	11	28,6	6120	3680	8490	1182	90	4	1590	300	6790	5128	2119	349	140
ATC-DC-1012J-35-2EF	1108	8,2	17,4	11	28,3	6120	3680	8490	1452	94	4	1590	300	6790	5128	2119	349	175
ATC-DC-1012K-25-2EF	1148	7,0	16,6	15	31,5	6140	3680	8520	1182	90	4	1590	300	6820	5128	2119	349	140
ATC-DC-1012K-35-2EF	1170	8,8	17,8	15	31,1	6140	3680	8520	1452	94	4	1590	300	6820	5128	2119	349	175
ATC-DC-1012L-25-2EF	1196	7,3	16,7	18,5	33,9	6160	3680	8540	1182	90	4	1590	300	6840	5128	2119	349	140
ATC-DC-1012L-35-2EF	1218	9,3	18,1	18,5	33,5	6160	3680	8540	1452	94	4	1590	300	6840	5128	2119	349	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

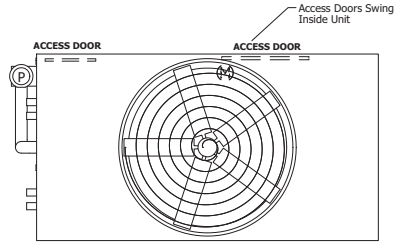
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

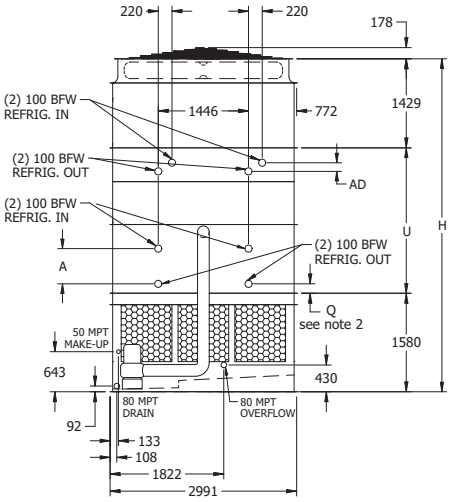
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

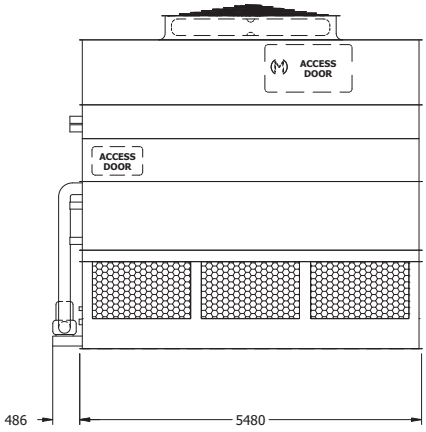
ATC-DC Models 1018I-25 to 1018M-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak*™** Dry Coil outlets and **Ellipti-*fin*®** Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.







Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump✦			Dimensions (mm) ▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	m³/s	Shipping	Operating	Heaviest Section				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-1018I-25-1EF	1066	12,1	19,9	7,5	34,1	6580	3360	10130	1310	76	5,5	2385	300	7620	4918	1909	140	140
ATC-DC-1018I-35-1EF	1086	13,4	20,9	7,5	33,8	6580	3360	10130	1684	82	5,5	2385	300	7620	4918	1909	140	175
ATC-DC-1018J-25-1EF	1174	12,0	19,9	11	39	6650	3360	10190	1310	76	5,5	2385	300	7690	4918	1909	140	140
ATC-DC-1018J-35-1EF	1196	13,7	21,1	11	38,7	6650	3360	10190	1684	82	5,5	2385	300	7690	4918	1909	140	175
ATC-DC-1018K-25-1EF	1256	11,9	19,9	15	43	6670	3360	10220	1310	76	5,5	2385	300	7720	4918	1909	140	140
ATC-DC-1018K-35-1EF	1280	13,9	21,2	15	42,5	6670	3360	10220	1684	82	5,5	2385	300	7720	4918	1909	140	175
ATC-DC-1018L-25-1EF	1326	11,7	19,7	18,5	46,3	6690	3360	10230	1310	76	5,5	2385	300	7730	4918	1909	140	140
ATC-DC-1018L-35-1EF	1351	14,0	21,2	18,5	45,8	6690	3360	10230	1684	82	5,5	2385	300	7730	4918	1909	140	175
ATC-DC-1018M-25-1EF	1378	11,7	19,7	22	49,2	6710	3360	10250	1310	76	5,5	2385	300	7750	4918	1909	140	140
ATC-DC-1018M-35-1EF	1404	14,1	21,3	22	48,7	6710	3360	10250	1684	82	5,5	2385	300	7750	4918	1909	140	175
ATC-DC-1018I-25-2EF	1282	8,3	17,4	7,5	33,4	8590	5380	12190	1759	126	5,5	2385	300	9690	5128	2119	349	140
ATC-DC-1018I-35-2EF	1307	9,0	17,9	7,5	33,1	8590	5380	12190	2133	132	5,5	2385	300	9690	5128	2119	349	175
ATC-DC-1018J-25-2EF	1412	8,5	17,6	11	38,3	8660	5380	12250	1759	126	5,5	2385	300	9750	5128	2119	349	140
ATC-DC-1018J-35-2EF	1439	9,6	18,3	11	37,9	8660	5380	12250	2133	132	5,5	2385	300	9750	5128	2119	349	175
ATC-DC-1018K-25-2EF	1516	8,5	17,6	15	42,1	8690	5380	12290	1759	126	5,5	2385	300	9780	5128	2119	349	140
ATC-DC-1018K-35-2EF	1545	9,8	18,5	15	41,7	8690	5380	12290	2133	132	5,5	2385	300	9780	5128	2119	349	175
ATC-DC-1018L-25-2EF	1599	8,5	17,6	18,5	45,4	8700	5380	12300	1759	126	5,5	2385	300	9800	5128	2119	349	140
ATC-DC-1018L-35-2EF	1629	10,0	18,6	18,5	44,9	8700	5380	12300	2133	132	5,5	2385	300	9800	5128	2119	349	175
ATC-DC-1018M-25-2EF	1659	8,5	17,6	22	48,2	8730	5380	12320	1759	126	5,5	2385	300	9820	5128	2119	349	140
ATC-DC-1018M-35-2EF	1691	10,3	18,7	22	47,7	8730	5380	12320	2133	132	5,5	2385	300	9820	5128	2119	349	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

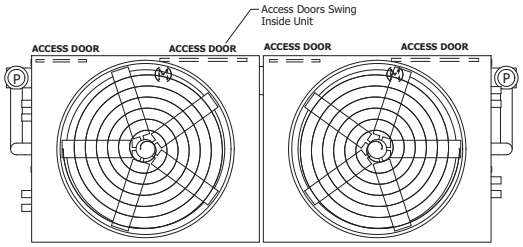
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

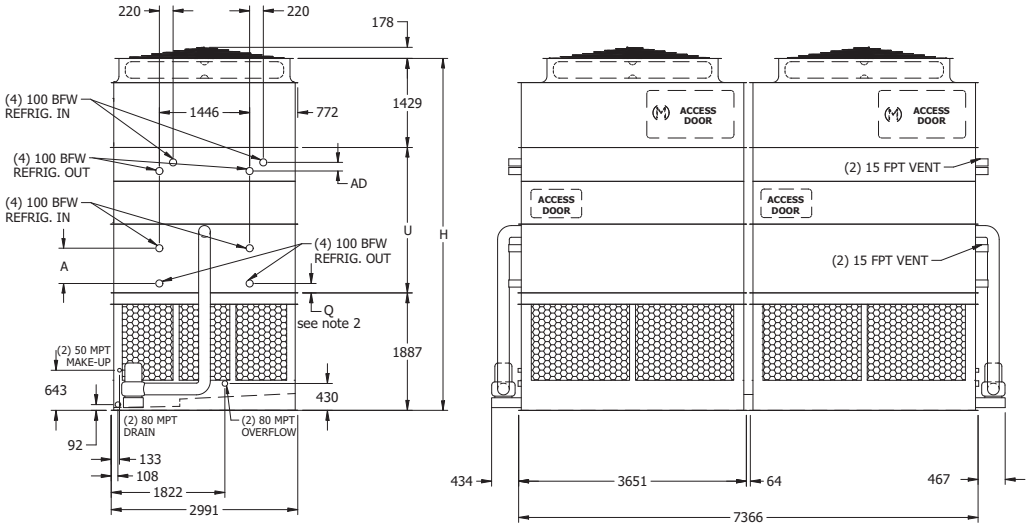
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

ATC-DC Models 1024I-25 to 1024L-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak***™ Dry Coil outlets and **Ellipti-*fin***® Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.





Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump ✦			Dimensions (mm) ▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	Total m^3/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-1024I-25-1EF	1638	10,4	18,9	(2) 7.5	50,9	9330	2290	14950	1235	107	(2) 4	3180	(2) 300	11540	5223	1910	140	140
ATC-DC-1024I-35-1EF	1669	12,3	20,1	(2) 7.5	50,4	9330	2290	14950	1504	115	(2) 4	3180	(2) 300	11540	5223	1910	140	175
ATC-DC-1024J-25-1EF	1802	10,3	18,8	(2) 11	58,3	9460	2290	15070	1235	107	(2) 4	3180	(2) 300	11670	5223	1910	140	140
ATC-DC-1024J-35-1EF	1836	12,6	20,3	(2) 11	57,7	9460	2290	15070	1504	115	(2) 4	3180	(2) 300	11670	5223	1910	140	175
ATC-DC-1024K-25-1EF	1906	10,4	18,8	(2) 15	64,2	9520	2290	15130	1235	107	(2) 4	3180	(2) 300	11720	5223	1910	140	140
ATC-DC-1024K-35-1EF	1942	12,9	20,5	(2) 15	63,5	9520	2290	15130	1504	115	(2) 4	3180	(2) 300	11720	5223	1910	140	175
ATC-DC-1024L-25-1EF	1984	10,4	18,9	(2) 18.5	69,1	9540	2290	15160	1235	107	(2) 4	3180	(2) 300	11750	5223	1910	140	140
ATC-DC-1024L-35-1EF	2022	13,2	20,7	(2) 18.5	68,4	9540	2290	15160	1504	115	(2) 4	3180	(2) 300	11750	5223	1910	140	175
ATC-DC-1024I-25-2EF	1976	6,5	16,2	(2) 7.5	49,9	12070	3660	17760	1833	179	(2) 4	3180	(2) 300	14350	5432	2119	349	140
ATC-DC-1024I-35-2EF	2013	7,6	17,0	(2) 7.5	49,4	12070	3660	17760	2103	188	(2) 4	3180	(2) 300	14350	5432	2119	349	175
ATC-DC-1024J-25-2EF	1976	6,7	16,4	(2) 11	57,2	12190	3660	17880	1833	179	(2) 4	3180	(2) 300	14480	5432	2119	349	140
ATC-DC-1024J-35-2EF	2013	8,2	17,4	(2) 11	56,6	12190	3660	17880	2103	188	(2) 4	3180	(2) 300	14480	5432	2119	349	175
ATC-DC-1024K-25-2EF	2296	7,0	16,6	(2) 15	62,9	12250	3660	17930	1833	179	(2) 4	3180	(2) 300	14540	5432	2119	349	140
ATC-DC-1024K-35-2EF	2340	8,8	17,8	(2) 15	62,3	12250	3660	17930	2103	188	(2) 4	3180	(2) 300	14540	5432	2119	349	175
ATC-DC-1024L-25-2EF	2392	7,3	16,7	(2) 18.5	67,8	12280	3660	17970	1833	179	(2) 4	3180	(2) 300	14560	5432	2119	349	140
ATC-DC-1024L-35-2EF	2437	9,3	18,1	(2) 18.5	67,1	12280	3660	17970	2103	188	(2) 4	3180	(2) 300	14560	5432	2119	349	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

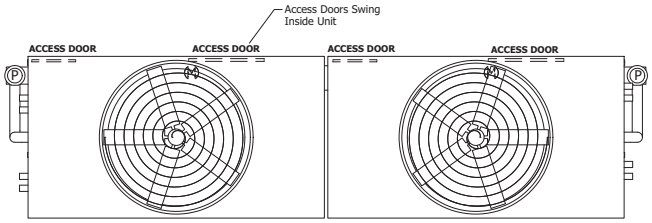
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

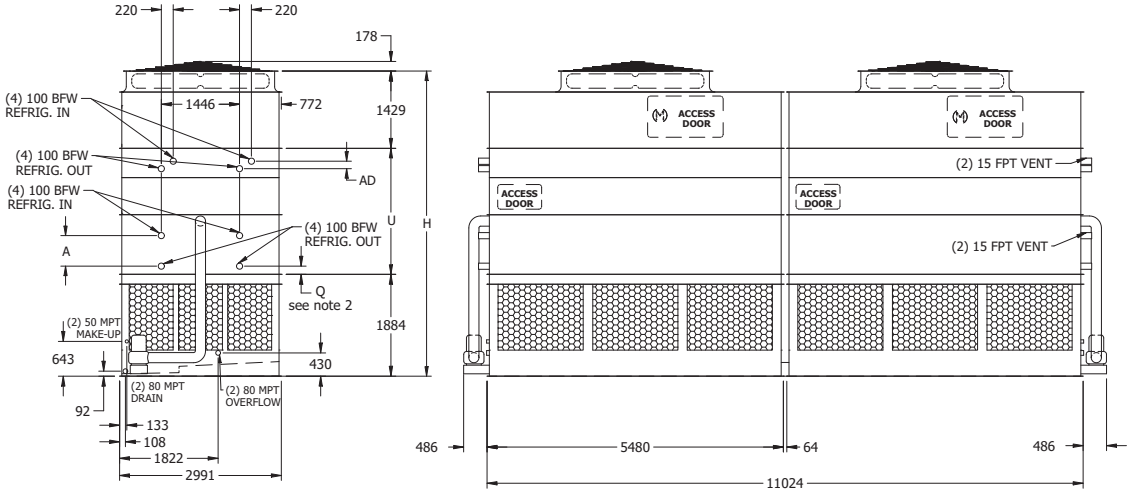
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

ATC-DC Models 1036I-25 to 1036M-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak*™** Dry Coil outlets and **Ellipti-*fin*®** Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.





Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump✦			Dimensions (mm)▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	Total m³/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-1036I-25-1EF	2132	12,1	19,9	(2) 7.5	68,2	13050	3310	21510	1818	151	(2) 5.5	4770	(2) 300	16510	5223	1910	140	140
ATC-DC-1036I-35-1EF	2172	13,4	20,9	(2) 7.5	67,5	13050	3310	21510	2193	164	(2) 5.5	4770	(2) 300	16510	5223	1910	140	175
ATC-DC-1036J-25-1EF	2348	12,0	19,9	(2) 11	78,1	13170	3310	21630	1818	151	(2) 5.5	4770	(2) 300	16630	5223	1910	140	140
ATC-DC-1036J-35-1EF	2392	13,7	21,1	(2) 11	77,3	13170	3310	21630	2193	164	(2) 5.5	4770	(2) 300	16630	5223	1910	140	175
ATC-DC-1036K-25-1EF	2513	11,9	19,9	(2) 15	85,9	13230	3310	21690	1818	151	(2) 5.5	4770	(2) 300	16690	5223	1910	140	140
ATC-DC-1036K-35-1EF	2560	13,9	21,2	(2) 15	85,1	13230	3310	21690	2193	164	(2) 5.5	4770	(2) 300	16690	5223	1910	140	175
ATC-DC-1036L-25-1EF	2651	11,7	19,7	(2) 18.5	92,6	13260	3310	21720	1818	151	(2) 5.5	4770	(2) 300	16720	5223	1910	140	140
ATC-DC-1036L-35-1EF	2701	14,0	21,2	(2) 18.5	91,7	13260	3310	21720	2193	164	(2) 5.5	4770	(2) 300	16720	5223	1910	140	175
ATC-DC-1036M-25-1EF	2755	11,7	19,7	(2) 22	98,4	13310	3310	21770	1818	151	(2) 5.5	4770	(2) 300	16760	5223	1910	140	140
ATC-DC-1036M-35-1EF	2807	14,1	21,3	(2) 22	97,4	13310	3310	21770	2193	164	(2) 5.5	4770	(2) 300	16760	5223	1910	140	175
ATC-DC-1036I-25-2EF	2565	9,5	18,2	(2) 7.5	66,9	17130	5340	25690	2724	251	(2) 5.5	4770	(2) 300	20690	5432	2119	349	140
ATC-DC-1036I-35-2EF	2613	9,3	18,1	(2) 7.5	66,2	17130	5340	25690	3098	263	(2) 5.5	4770	(2) 300	20690	5432	2119	349	175
ATC-DC-1036J-25-2EF	2825	10,0	18,6	(2) 11	76,6	17250	5340	25810	2724	251	(2) 5.5	4770	(2) 300	20810	5432	2119	349	140
ATC-DC-1036J-35-2EF	2878	10,0	18,6	(2) 11	75,8	17250	5340	25810	3098	263	(2) 5.5	4770	(2) 300	20810	5432	2119	349	175
ATC-DC-1036K-25-2EF	3033	10,3	18,8	(2) 15	84,3	17310	5340	25870	2724	251	(2) 5.5	4770	(2) 300	20870	5432	2119	349	140
ATC-DC-1036K-35-2EF	3090	10,4	18,8	(2) 15	83,4	17310	5340	25870	3098	263	(2) 5.5	4770	(2) 300	20870	5432	2119	349	175
ATC-DC-1036L-25-2EF	3202	10,4	18,9	(2) 18.5	90,8	17340	5340	25900	2724	251	(2) 5.5	4770	(2) 300	20900	5432	2119	349	140
ATC-DC-1036L-35-2EF	3262	10,7	19,0	(2) 18.5	89,9	17340	5340	25900	3098	263	(2) 5.5	4770	(2) 300	20900	5432	2119	349	175
ATC-DC-1036M-25-2EF	3323	10,7	19,0	(2) 22	96,5	17380	5340	25950	2724	251	(2) 5.5	4770	(2) 300	20950	5432	2119	349	140
ATC-DC-1036M-35-2EF	3386	11,0	19,2	(2) 22	95,5	17380	5340	25950	3098	263	(2) 5.5	4770	(2) 300	20950	5432	2119	349	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

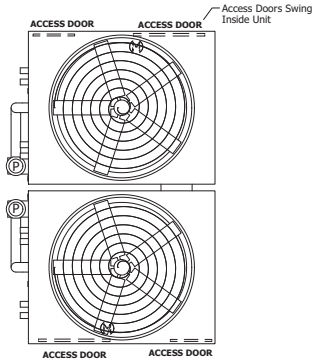
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

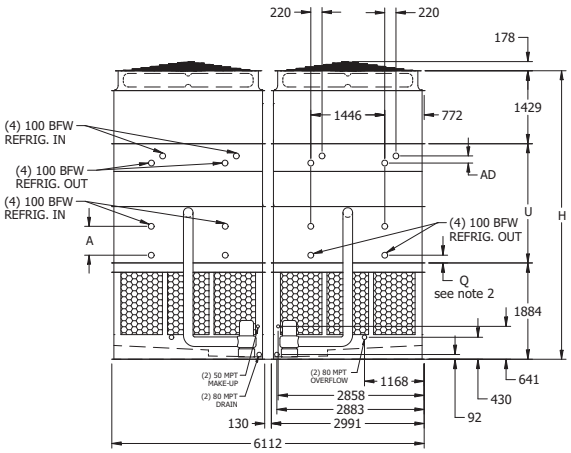
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

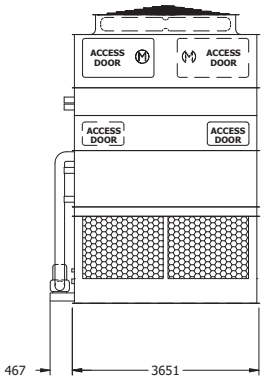
ATC-DC Models 2012I-25 to 2012L-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak*™** Dry Coil outlets and **Ellipti-*fin*®** Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.







Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump✦			Dimensions (mm) ▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	Total m^3/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-2012I-25-1EF	1638	12,7	20,4	(2) 7.5	50,9	9430	2340	15040	1235	107	(2) 4	3180	(2) 300	11640	5223	1910	140	140
ATC-DC-2012I-35-1EF	1669	12,9	20,5	(2) 7.5	50,4	9430	2340	15040	1504	115	(2) 4	3180	(2) 300	11640	5223	1910	140	175
ATC-DC-2012J-25-1EF	1802	13,0	20,6	(2) 11	58,3	9560	2340	15160	1235	107	(2) 4	3180	(2) 300	11770	5223	1910	140	140
ATC-DC-2012J-35-1EF	1836	13,4	20,9	(2) 11	57,7	9560	2340	15160	1504	115	(2) 4	3180	(2) 300	11770	5223	1910	140	175
ATC-DC-2012K-25-1EF	1906	13,3	20,8	(2) 15	64,2	9610	2340	15220	1235	107	(2) 4	3180	(2) 300	11820	5223	1910	140	140
ATC-DC-2012K-35-1EF	1942	14,0	21,2	(2) 15	63,5	9610	2340	15220	1504	115	(2) 4	3180	(2) 300	11820	5223	1910	140	175
ATC-DC-2012L-25-1EF	1984	13,6	21,0	(2) 18.5	69,1	9640	2340	15250	1235	107	(2) 4	3180	(2) 300	11850	5223	1910	140	140
ATC-DC-2012L-35-1EF	2022	14,4	21,5	(2) 18.5	68,4	9640	2340	15250	1504	115	(2) 4	3180	(2) 300	11850	5223	1910	140	175
ATC-DC-2012I-25-2EF	1976	8,2	17,4	(2) 7.5	49,9	12120	3680	17800	1833	179	(2) 4	3180	(2) 300	14400	5432	2119	349	140
ATC-DC-2012I-35-2EF	2013	8,2	17,4	(2) 7.5	49,4	12120	3680	17800	2103	188	(2) 4	3180	(2) 300	14400	5432	2119	349	175
ATC-DC-2012J-25-2EF	1976	11,2	19,4	(2) 11	57,2	12240	3680	17930	1833	179	(2) 4	3180	(2) 300	14530	5432	2119	349	140
ATC-DC-2012J-35-2EF	2013	11,3	19,5	(2) 11	56,6	12240	3680	17930	2103	188	(2) 4	3180	(2) 300	14530	5432	2119	349	175
ATC-DC-2012K-25-2EF	2296	9,3	18,1	(2) 15	62,9	12300	3680	17990	1833	179	(2) 4	3180	(2) 300	14580	5432	2119	349	140
ATC-DC-2012K-35-2EF	2340	9,7	18,3	(2) 15	62,3	12300	3680	17990	2103	188	(2) 4	3180	(2) 300	14580	5432	2119	349	175
ATC-DC-2012L-25-2EF	2392	9,7	18,4	(2) 18.5	67,8	12330	3680	18010	1833	179	(2) 4	3180	(2) 300	14610	5432	2119	349	140
ATC-DC-2012L-35-2EF	2437	10,2	18,7	(2) 18.5	67,1	12330	3680	18010	2103	188	(2) 4	3180	(2) 300	14610	5432	2119	349	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

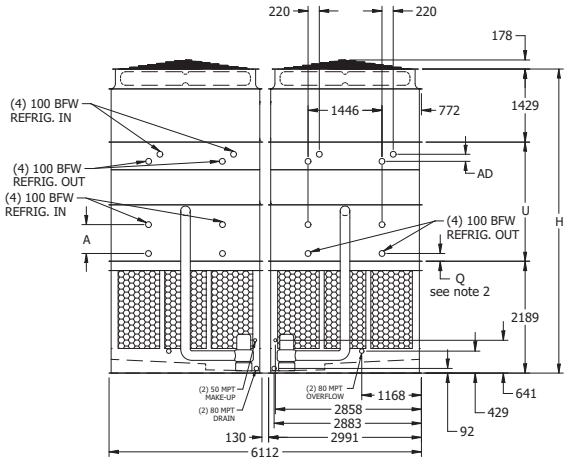
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

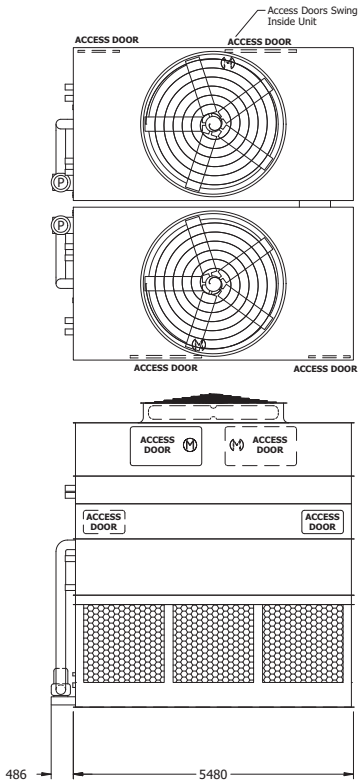
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

ATC-DC Models 2018I-25 to 2018L-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak*™** Dry Coil outlets and **Ellipti-*fin*®** Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.





Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump✦			Dimensions (mm) ▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	Total m³/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-2018I-25-1EF	2132	12,1	19,9	(2) 7.5	68,2	13130	3330	21580	1818	151	(2) 5.5	4770	(2) 300	16580	5528	1910	140	140
ATC-DC-2018I-35-1EF	2172	13,4	20,9	(2) 7.5	67,5	13130	3330	21580	2193	164	(2) 5.5	4770	(2) 300	16580	5528	1910	140	175
ATC-DC-2018J-25-1EF	2348	12,0	19,9	(2) 11	78,1	13250	3330	21710	1818	151	(2) 5.5	4770	(2) 300	16710	5528	1910	140	140
ATC-DC-2018J-35-1EF	2392	13,7	21,1	(2) 11	77,3	13250	3330	21710	2193	164	(2) 5.5	4770	(2) 300	16710	5528	1910	140	175
ATC-DC-2018K-25-1EF	2513	11,9	19,9	(2) 15	85,9	13310	3330	21770	1818	151	(2) 5.5	4770	(2) 300	16760	5528	1910	140	140
ATC-DC-2018K-35-1EF	2560	13,9	21,2	(2) 15	85,1	13310	3330	21770	2193	164	(2) 5.5	4770	(2) 300	16760	5528	1910	140	175
ATC-DC-2018L-25-1EF	2651	11,7	19,7	(2) 18.5	92,6	13340	3330	21790	1818	151	(2) 5.5	4770	(2) 300	16790	5528	1910	140	140
ATC-DC-2018L-35-1EF	2701	14,0	21,2	(2) 18.5	91,7	13340	3330	21790	2193	164	(2) 5.5	4770	(2) 300	16790	5528	1910	140	175
ATC-DC-2018M-25-1EF	2755	11,7	19,7	(2) 22	98,4	13380	3330	21840	1818	151	(2) 5.5	4770	(2) 300	16840	5528	1910	140	140
ATC-DC-2018M-35-1EF	2807	14,1	21,3	(2) 22	97,4	13380	3330	21840	2193	164	(2) 5.5	4770	(2) 300	16840	5528	1910	140	175
ATC-DC-2018I-25-2EF	2565	9,5	18,2	(2) 7.5	66,9	17170	5360	25740	2724	251	(2) 5.5	4770	(2) 300	20740	5737	2119	349	140
ATC-DC-2018I-35-2EF	2613	9,3	18,1	(2) 7.5	66,2	17170	5360	25740	3098	263	(2) 5.5	4770	(2) 300	20740	5737	2119	349	175
ATC-DC-2018J-25-2EF	2825	10,0	18,6	(2) 11	76,6	17300	5360	25860	2724	164	(2) 5.5	4770	(2) 300	20860	5737	2119	349	140
ATC-DC-2018J-35-2EF	2878	10,0	18,6	(2) 11	75,8	17300	5360	25860	3098	263	(2) 5.5	4770	(2) 300	20860	5737	2119	349	175
ATC-DC-2018K-25-2EF	3033	10,3	18,8	(2) 15	84,3	17360	5360	25920	2724	164	(2) 5.5	4770	(2) 300	20920	5737	2119	349	140
ATC-DC-2018K-35-2EF	3090	10,4	18,8	(2) 15	83,4	17360	5360	25920	3098	263	(2) 5.5	4770	(2) 300	20920	5737	2119	349	175
ATC-DC-2018L-25-2EF	3202	10,4	18,9	(2) 18.5	90,8	17380	5360	25950	2724	164	(2) 5.5	4770	(2) 300	20950	5737	2119	349	140
ATC-DC-2018L-35-2EF	3262	10,7	19,0	(2) 18.5	89,9	17380	5360	25950	3098	263	(2) 5.5	4770	(2) 300	20950	5737	2119	349	175
ATC-DC-2018M-25-2EF	3323	10,7	19,0	(2) 22	96,5	17430	5360	25990	2724	164	(2) 5.5	4770	(2) 300	20990	5737	2119	349	140
ATC-DC-2018M-35-2EF	3386	11,0	19,2	(2) 22	95,5	17430	5360	25990	3098	263	(2) 5.5	4770	(2) 300	20990	5737	2119	349	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

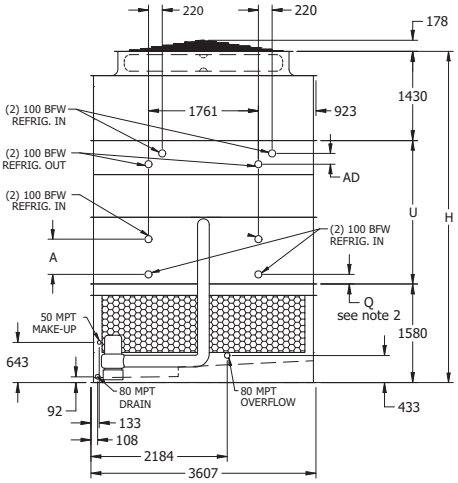
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

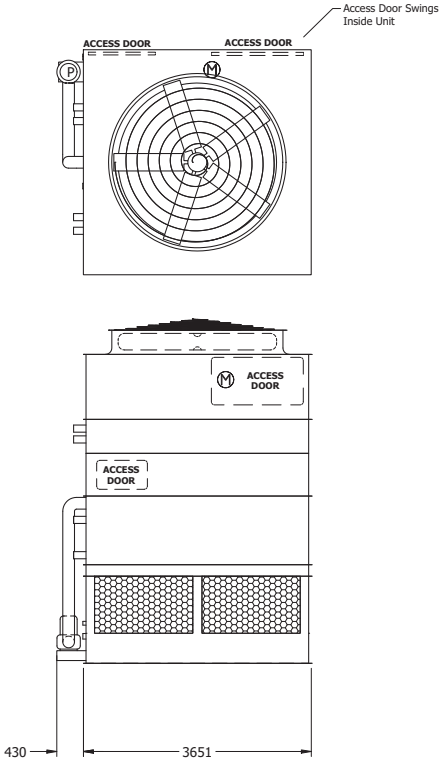
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

ATC-DC Models 1212J-25 to 1212L-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak***™ Dry Coil outlets and **Ellipti-*fin***® Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.





Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump✦			Dimensions (mm) ▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	m^3/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-1212J-25-1EF	830	16,4	22,9	11	35	5210	2570	7930	1078	64	4	1855	300	6050	4918	1908	140	140
ATC-DC-1212J-35-1EF	845	18,1	24,0	11	34,7	5210	2570	7930	1392	69	4	1855	300	6050	4918	1908	140	175
ATC-DC-1212K-25-1EF	884	16,3	22,8	15	38,5	5240	2570	7960	1078	64	4	1855	300	6080	4918	1908	140	140
ATC-DC-1212K-35-1EF	900	18,2	24,1	15	38,1	5240	2570	7960	1392	69	4	1855	300	6080	4918	1908	140	175
ATC-DC-1212L-25-1EF	918	16,4	22,9	18,5	41,5	5260	2570	7970	1078	64	4	1855	300	6090	4918	1908	140	140
ATC-DC-1212L-35-1EF	936	18,5	24,2	18,5	41,1	5260	2570	7970	1392	69	4	1855	300	6090	4918	1908	140	175
ATC-DC-1212J-25-2EF	1092	11,6	19,7	11	34,3	6780	4140	9540	1444	105	4	1855	300	7660	5128	2118	349	140
ATC-DC-1212J-35-2EF	1112	12,8	20,5	11	34	6780	4140	9540	1759	110	4	1855	300	7660	5128	2118	349	175
ATC-DC-1212K-25-2EF	1165	11,7	19,7	15	37,8	6800	4140	9570	1444	105	4	1855	300	7690	5128	2118	349	140
ATC-DC-1212K-35-2EF	1187	13,1	20,7	15	37,4	6800	4140	9570	1759	110	4	1855	300	7690	5128	2118	349	175
ATC-DC-1212L-25-2EF	1209	12,0	19,9	18,5	40,7	6820	4140	9580	1444	105	4	1855	300	7700	5128	2118	349	140
ATC-DC-1212L-35-2EF	1232	13,6	21,0	18,5	40,3	6820	4140	9580	1759	110	4	1855	300	7700	5128	2118	349	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

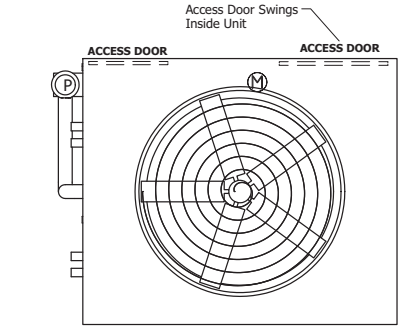
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

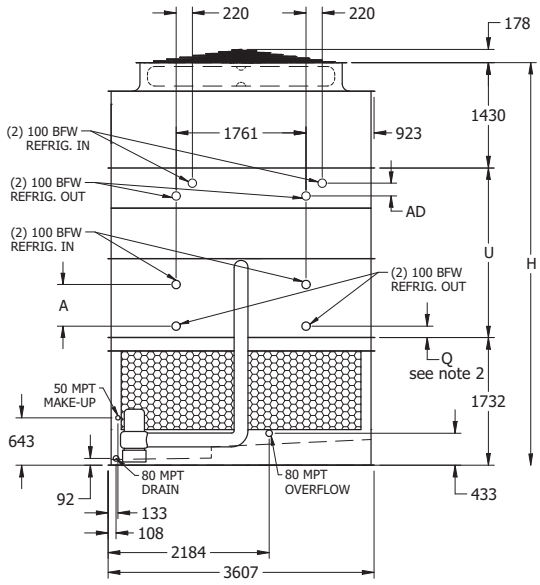
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

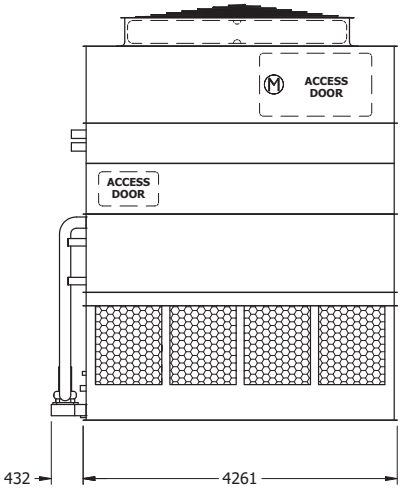
ATC-DC Models 1214K-25 to 1214M-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak*™** Dry Coil outlets and **Ellipti-*fin*®** Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.







Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump✦			Dimensions (mm) ▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	m³/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-1214K-25-1EF	953	17,2	23,4	15	42,7	5860	2920	9070	1235	75	4	2160	300	6900	5070	1908	140	140
ATC-DC-1214K-35-1EF	971	18,9	24,5	15	42,2	5860	2920	9070	1609	81	4	2160	300	6900	5070	1908	140	175
ATC-DC-1214L-25-1EF	999	17,2	23,4	18,5	45,9	5870	2920	9090	1235	75	4	2160	300	6910	5070	1908	140	140
ATC-DC-1214L-35-1EF	1017	19,0	24,6	18,5	45,5	5870	2920	9090	1609	81	4	2160	300	6910	5070	1908	140	175
ATC-DC-1214M-25-1EF	1027	17,4	23,5	22	48,8	5900	2920	9110	1235	75	4	2160	300	6940	5070	1908	140	140
ATC-DC-1214M-35-1EF	1046	19,3	24,8	22	48,3	5900	2920	9110	1609	81	4	2160	300	6940	5070	1908	140	175
ATC-DC-1214K-25-2EF	1252	12,8	20,5	15	41,8	7650	4710	10910	1691	125	4	2160	300	8740	5280	2118	349	140
ATC-DC-1214K-35-2EF	1276	14,0	21,3	15	41,4	7650	4710	10910	2065	131	4	2160	300	8740	5280	2118	349	175
ATC-DC-1214L-25-2EF	1313	12,9	20,5	18,5	45	7670	4710	10930	1691	125	4	2160	300	8750	5280	2118	349	140
ATC-DC-1214L-35-2EF	1338	14,3	21,4	18,5	44,6	7670	4710	10930	2065	131	4	2160	300	8750	5280	2118	349	175
ATC-DC-1214M-25-2EF	1352	13,1	20,7	22	47,9	7690	4710	10960	1691	125	4	2160	300	8780	5280	2118	349	140
ATC-DC-1214M-35-2EF	1377	14,7	21,7	22	47,4	7690	4710	10960	2065	131	4	2160	300	8780	5280	2118	349	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

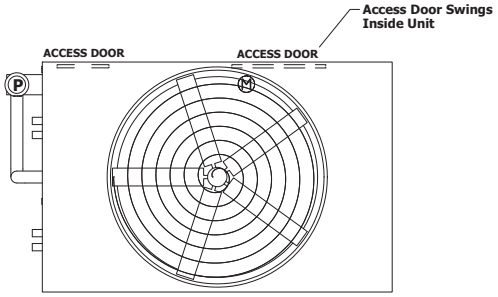
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

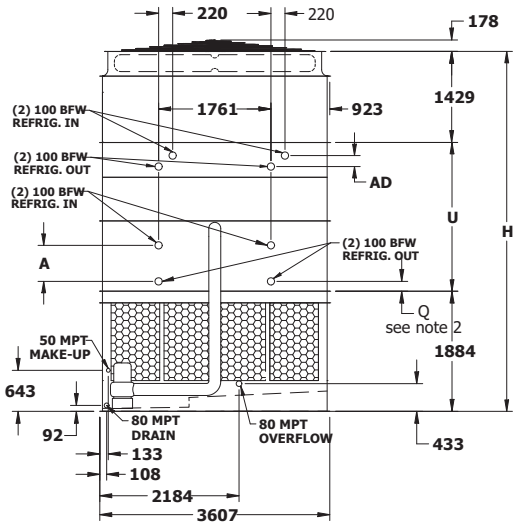
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

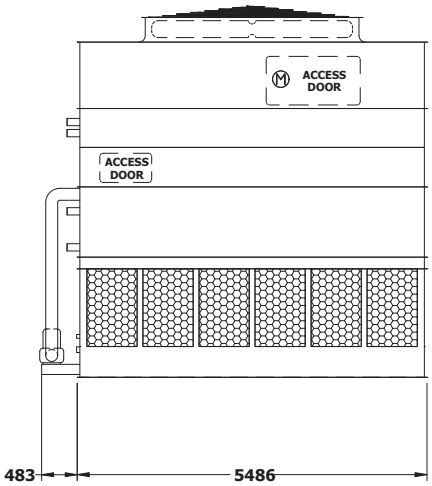
ATC-DC Models
1218K-25 to 1218M-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak*™** Dry Coil outlets and **Ellipti-*fin*®** Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.







Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump✦			Dimensions (mm) ▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	m³/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-1218K-25-1EF	1192	17,3	23,4	15	52,7	7310	3700	11370	1586	92	5,5	2725	300	8570	5223	1910	140	140
ATC-DC-1218K-35-1EF	1215	18,8	24,5	15	52,2	7310	3700	11370	2065	100	5,5	2725	300	8570	5223	1910	140	175
ATC-DC-1218L-25-1EF	1256	17,3	23,4	18,5	56,8	7320	3700	11380	1586	92	5,5	2725	300	8590	5223	1910	140	140
ATC-DC-1218L-35-1EF	1280	18,9	24,5	18,5	56,2	7320	3700	11380	2065	100	5,5	2725	300	8590	5223	1910	140	175
ATC-DC-1218M-25-1EF	1313	17,1	23,3	22	60,3	7350	3700	11410	1586	92	5,5	2725	300	8610	5223	1910	140	140
ATC-DC-1218M-35-1EF	1338	18,9	24,5	22	59,7	7350	3700	11410	2065	100	5,5	2725	300	8610	5223	1910	140	175
ATC-DC-1218K-25-2EF	1568	12,8	20,4	15	51,7	9700	6080	13820	2125	156	5,5	2725	300	11030	5432	2119	349	140
ATC-DC-1218K-35-2EF	1598	13,9	21,2	15	51,1	9700	6080	13820	2604	163	5,5	2725	300	11030	5432	2119	349	175
ATC-DC-1218L-25-2EF	1655	12,7	20,4	18,5	55,6	9710	6080	13830	2125	156	5,5	2725	300	11040	5432	2119	349	140
ATC-DC-1218L-35-2EF	1686	14,0	21,2	18,5	55,1	9710	6080	13830	2604	163	5,5	2725	300	11040	5432	2119	349	175
ATC-DC-1218M-25-2EF	1729	12,7	20,4	22	59,1	9730	6080	13860	2125	156	5,5	2725	300	11060	5432	2119	349	140
ATC-DC-1218M-35-2EF	1761	14,1	21,3	22	58,5	9730	6080	13860	2604	163	5,5	2725	300	11060	5432	2119	349	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

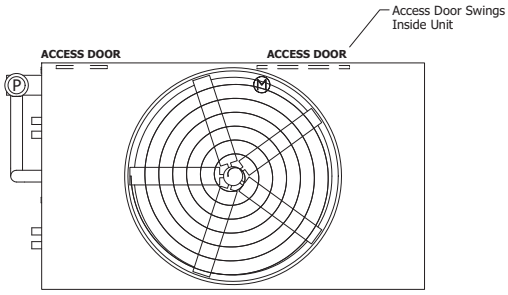
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

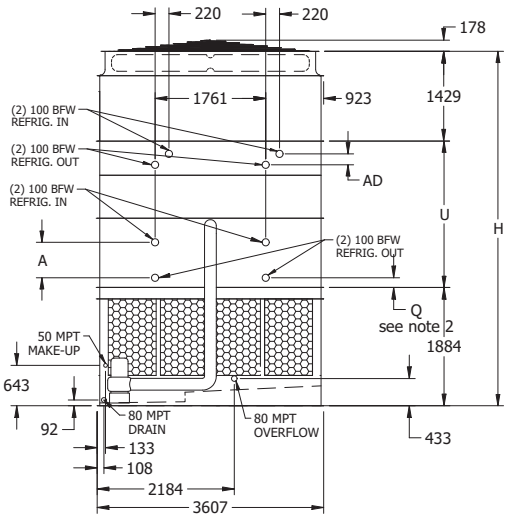
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

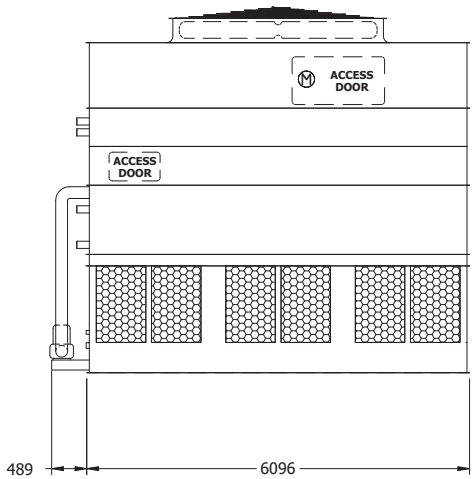
ATC-DC Models 1220L-25 to 1220N-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak*™** Dry Coil outlets and **Ellipti-*fin*®** Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.







Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump✦			Dimensions (mm) ▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	m³/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-1220L-25-1EF	1315	17,8	23,8	18,5	60,4	8040	4040	12620	1766	98	7,5	3030	350	9420	5223	1910	140	140
ATC-DC-1220L-35-1EF	1340	19,4	24,8	18,5	59,8	8040	4040	12620	2290	107	7,5	3030	350	9420	5223	1910	140	175
ATC-DC-1220M-25-1EF	1367	17,8	23,8	22	64,2	8060	4040	12640	1766	98	7,5	3030	350	9450	5223	1910	140	140
ATC-DC-1220M-35-1EF	1393	19,4	24,9	22	63,5	8060	4040	12640	2290	107	7,5	3030	350	9450	5223	1910	140	175
ATC-DC-1220N-25-1EF	1454	17,7	23,7	30	70,6	8140	4040	12720	1766	98	7,5	3030	350	9520	5223	1910	140	140
ATC-DC-1220N-35-1EF	1481	19,6	25,0	30	69,9	8140	4040	12720	2290	107	7,5	3030	350	9520	5223	1910	140	175
ATC-DC-1220L-25-2EF	1729	13,5	20,9	18,5	59,2	10650	6650	15300	2395	176	7,5	3030	350	12110	5432	2119	349	140
ATC-DC-1220L-35-2EF	1761	14,6	21,6	18,5	58,6	10650	6650	15300	2911	184	7,5	3030	350	12110	5432	2119	349	175
ATC-DC-1220M-25-2EF	1798	13,5	20,9	22	62,9	10670	6650	15320	2395	176	7,5	3030	350	12140	5432	2119	349	140
ATC-DC-1220M-35-2EF	1832	14,8	21,8	22	62,3	10670	6650	15320	2911	184	7,5	3030	350	12140	5432	2119	349	175
ATC-DC-1220N-25-2EF	1915	13,5	20,9	30	69,3	10750	6650	15400	2395	176	7,5	3030	350	12210	5432	2119	349	140
ATC-DC-1220N-35-2EF	1951	15,0	21,9	30	68,6	10750	6650	15400	2911	184	7,5	3030	350	12210	5432	2119	349	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

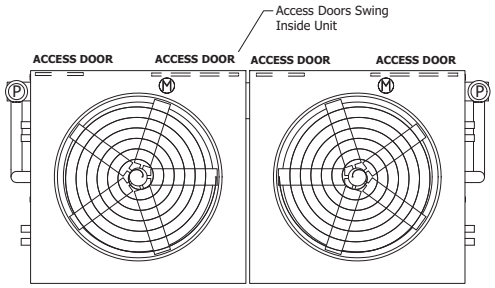
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

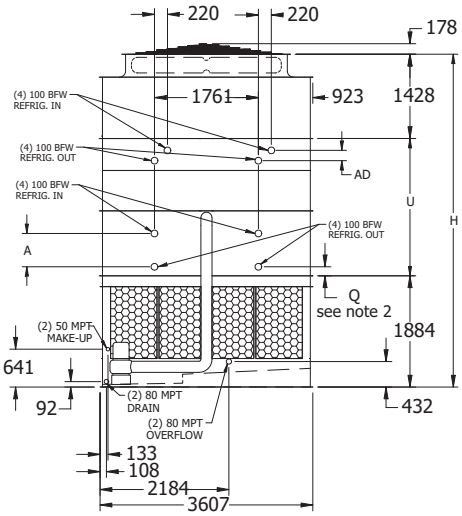
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

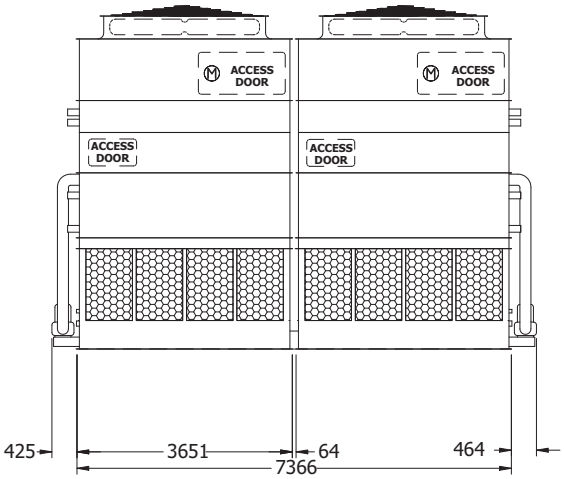
ATC-DC Models 1224K-25 to1224L-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak*™** Dry Coil outlets and **Ellipti-*fin*®** Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.







Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump ✦			Dimensions (mm) ▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	Total m^3/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-1224K-25-1EF	1768	16,3	22,8	(2) 15	77,1	10400	2540	16580	1527	129	(2) 4	3710	(2) 300	12820	5223	1911	140	140
ATC-DC-1224K-35-1EF	1801	18,2	24,1	(2) 15	76,3	10400	2540	16580	1841	139	(2) 4	3710	(2) 300	12820	5223	1911	140	175
ATC-DC-1224L-25-1EF	1837	16,4	22,9	(2) 18.5	83	10430	2540	16610	1527	129	(2) 4	3710	(2) 300	12850	5223	1911	140	140
ATC-DC-1224L-35-1EF	1872	18,5	24,2	(2) 18.5	82,2	10430	2540	16610	1841	139	(2) 4	3710	(2) 300	12850	5223	1911	140	175
ATC-DC-1224J-25-2EF	2179	11,7	19,7	(2) 11	76	13520	4120	19780	2267	210	(2) 4	3710	(2) 300	16020	5432	2120	349	140
ATC-DC-1224J-35-2EF	2220	12,9	20,5	(2) 11	75,2	13520	4120	19780	2582	220	(2) 4	3710	(2) 300	16020	5432	2120	349	175
ATC-DC-1224K-25-2EF	2318	11,8	19,8	(2) 15	83,6	13570	4120	19840	2267	210	(2) 4	3710	(2) 300	16080	5432	2120	349	140
ATC-DC-1224K-35-2EF	2362	13,3	20,7	(2) 15	82,8	13570	4120	19840	2582	220	(2) 4	3710	(2) 300	16080	5432	2120	349	175
ATC-DC-1224L-25-2EF	2418	12,0	19,9	(2) 18.5	90,1	13600	4120	19870	2267	210	(2) 4	3710	(2) 300	16110	5432	2120	349	140
ATC-DC-1224L-35-2EF	2463	13,6	21,0	(2) 18.5	89,2	13600	4120	19870	2582	220	(2) 4	3710	(2) 300	16110	5432	2120	349	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

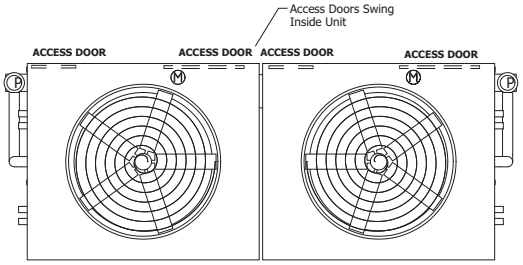
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

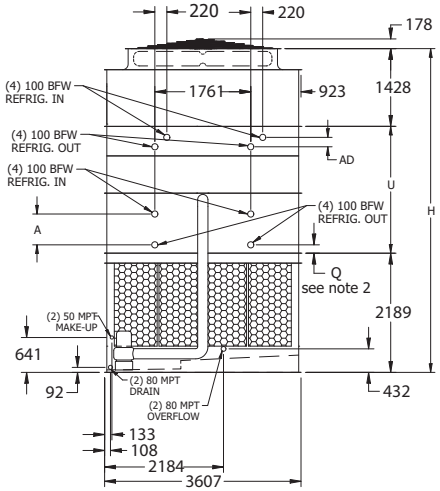
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

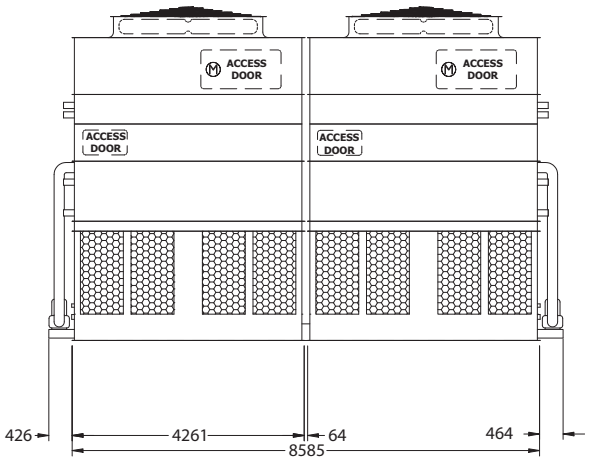
ATC-DC Models
1228K-25 to 1228M-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak*™** Dry Coil outlets and **Ellipti-*fin*®** Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.







Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump✦			Dimensions (mm) ▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	Total m^3/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-1228K-25-1EF	1906	17,2	23,4	(2) 15	85,3	11630	2870	18890	1751	150	(2) 4	4315	(2) 300	14540	5528	1911	140	140
ATC-DC-1228K-35-1EF	1942	18,9	24,5	(2) 15	84,5	11630	2870	18890	2125	162	(2) 4	4315	(2) 300	14540	5528	1911	140	175
ATC-DC-1228L-25-1EF	1997	17,2	23,4	(2) 18.5	91,9	11660	2870	18920	1751	150	(2) 4	4315	(2) 300	14570	5528	1911	140	140
ATC-DC-1228L-35-1EF	2035	19,0	24,6	(2) 18.5	91	11660	2870	18920	2125	162	(2) 4	4315	(2) 300	14570	5528	1911	140	175
ATC-DC-1228M-25-1EF	2054	17,4	23,5	(2) 22	97,7	11710	2870	18970	1751	150	(2) 4	4315	(2) 300	14620	5528	1911	140	140
ATC-DC-1228M-35-1EF	2092	19,3	24,8	(2) 22	96,7	11710	2870	18970	2125	162	(2) 4	4315	(2) 300	14620	5528	1911	140	175
ATC-DC-1228K-25-2EF	2504	12,8	20,5	(2) 15	83,6	15250	4680	22620	2627	250	(2) 4	4315	(2) 300	18260	5737	2120	349	140
ATC-DC-1228K-35-2EF	2551	14,0	21,3	(2) 15	82,8	15250	4680	22620	3001	262	(2) 4	4315	(2) 300	18260	5737	2120	349	175
ATC-DC-1228L-25-2EF	2625	12,9	20,5	(2) 18.5	90,1	15280	4680	22650	2627	250	(2) 4	4315	(2) 300	18290	5737	2120	349	140
ATC-DC-1228L-35-2EF	2675	14,3	21,4	(2) 18.5	89,2	15280	4680	22650	3001	262	(2) 4	4315	(2) 300	18290	5737	2120	349	175
ATC-DC-1228M-25-2EF	2703	13,1	20,7	(2) 22	95,7	15320	4680	22700	2627	250	(2) 4	4315	(2) 300	18340	5737	2120	349	140
ATC-DC-1228M-35-2EF	2754	14,7	21,7	(2) 22	94,8	15320	4680	22700	3001	262	(2) 4	4315	(2) 300	18340	5737	2120	349	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

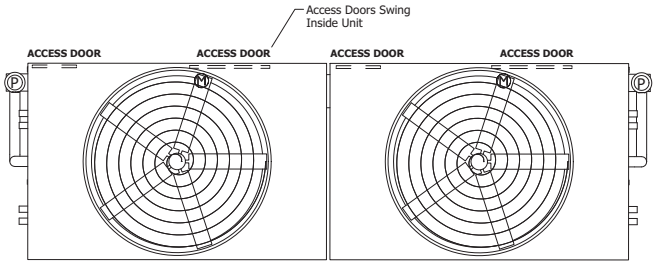
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

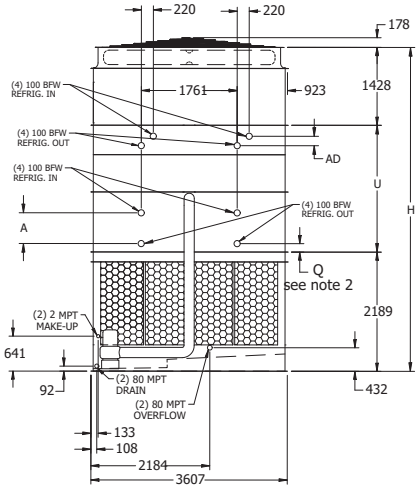
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

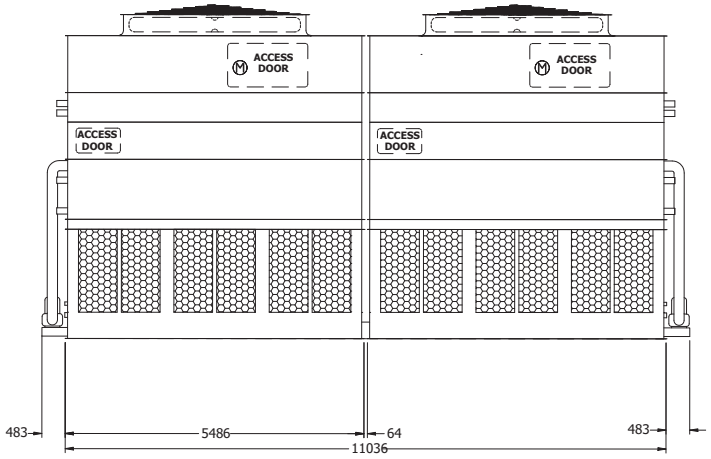
ATC-DC Models
1236K-25 to 1236M-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak***™ Dry Coil outlets and **Ellipti-*fin***® Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.







Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump✦			Dimensions (mm) ▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	Total m^3/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-1236K-25-1EF	2385	17,3	23,4	(2) 15	105,4	14510	3640	23800	2208	184	(2) 5.5	5450	(2) 300	18210	5528	1911	140	140
ATC-DC-1236K-35-1EF	2430	18,8	24,5	(2) 15	104,3	14510	3640	23800	2687	200	(2) 5.5	5450	(2) 300	18210	5528	1911	140	175
ATC-DC-1236L-25-1EF	2513	17,3	23,4	(2) 18.5	113,5	14540	3640	23830	2208	184	(2) 5.5	5450	(2) 300	18240	5528	1911	140	140
ATC-DC-1236L-35-1EF	2560	18,9	24,5	(2) 18.5	112,4	14540	3640	23830	2687	200	(2) 5.5	5450	(2) 300	18240	5528	1911	140	175
ATC-DC-1236M-25-1EF	2625	17,1	23,3	(2) 22	120,6	14580	3640	23880	2208	184	(2) 5.5	5450	(2) 300	18290	5528	1911	140	140
ATC-DC-1236M-35-1EF	2675	18,9	24,5	(2) 22	119,4	14580	3640	23880	2687	200	(2) 5.5	5450	(2) 300	18290	5528	1911	140	175
ATC-DC-1236K-25-2EF	3137	12,8	20,4	(2) 15	103,3	19330	6050	28750	3315	311	(2) 5.5	5450	(2) 300	23160	5737	2120	349	140
ATC-DC-1236K-35-2EF	3196	13,9	21,2	(2) 15	102,3	19330	6050	28750	3794	327	(2) 5.5	5450	(2) 300	23160	5737	2120	349	175
ATC-DC-1236L-25-2EF	3310	12,7	20,4	(2) 18.5	111,3	19360	6050	28780	3315	311	(2) 5.5	5450	(2) 300	23190	5737	2120	349	140
ATC-DC-1236L-35-2EF	3372	14,0	21,2	(2) 18.5	110,2	19360	6050	28780	3794	327	(2) 5.5	5450	(2) 300	23190	5737	2120	349	175
ATC-DC-1236M-25-2EF	3457	12,7	20,4	(2) 22	118,3	19400	6050	28830	3315	311	(2) 5.5	5450	(2) 300	23240	5737	2120	349	140
ATC-DC-1236M-35-2EF	3523	14,1	21,3	(2) 22	117,1	19400	6050	28830	3794	327	(2) 5.5	5450	(2) 300	23240	5737	2120	349	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

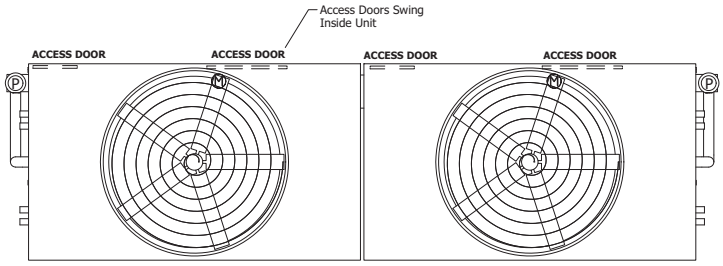
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

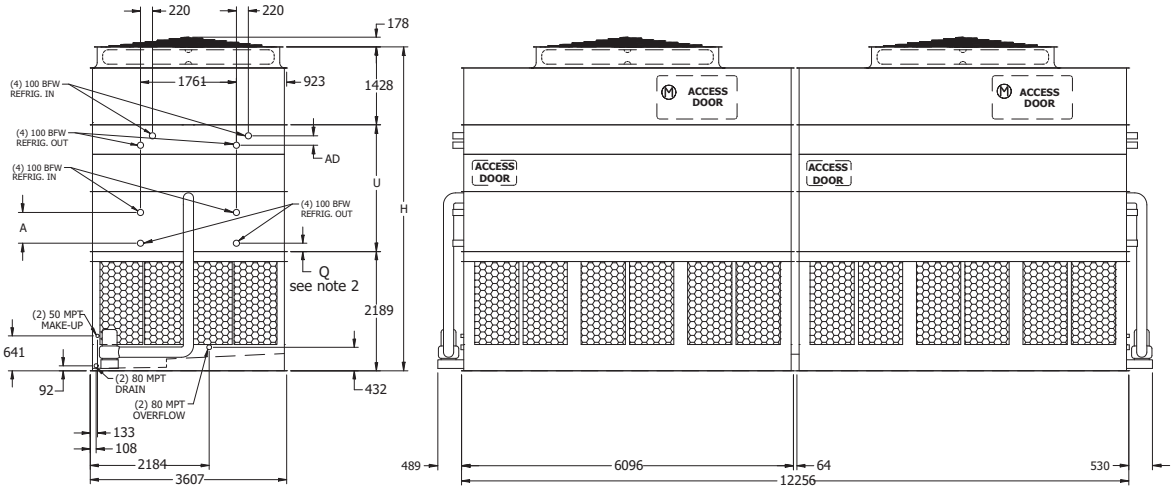
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

ATC-DC Models 1240L-25 to 1240N-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak*™** Dry Coil outlets and **Ellipti-*fin*®** Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.





Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump✦			Dimensions (mm)▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	Total m^3/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-1240L-25-1EF	2630	17,8	23,8	(2) 18.5	120,8	15940	3970	26340	2447	197	(2) 7.5	6055	(2) 350	19960	5528	1911	140	140
ATC-DC-1240L-35-1EF	2679	19,4	24,8	(2) 18.5	119,6	15940	3970	26340	2971	214	(2) 7.5	6055	(2) 350	19960	5528	1911	140	175
ATC-DC-1240M-25-1EF	2735	17,8	23,8	(2) 22	128,4	15990	3970	26390	2447	197	(2) 7.5	6055	(2) 350	20010	5528	1911	140	140
ATC-DC-1240M-35-1EF	2786	19,4	24,9	(2) 22	127,1	15990	3970	26390	2971	214	(2) 7.5	6055	(2) 350	20010	5528	1911	140	175
ATC-DC-1240N-25-1EF	2907	17,7	23,7	(2) 30	141,3	16140	3970	26540	2447	197	(2) 7.5	6055	(2) 350	20160	5528	1911	140	140
ATC-DC-1240N-35-1EF	2962	19,6	25,0	(2) 30	139,9	16140	3970	26540	2971	214	(2) 7.5	6055	(2) 350	20160	5528	1911	140	175
ATC-DC-1240L-25-2EF	3444	13,6	20,9	(2) 18.5	118,4	21220	6620	31780	3697	351	(2) 7.5	6055	(2) 350	25400	5737	2120	349	140
ATC-DC-1240L-35-2EF	3509	14,7	21,7	(2) 18.5	117,2	21220	6620	31780	4213	368	(2) 7.5	6055	(2) 350	25400	5737	2120	349	175
ATC-DC-1240M-25-2EF	3583	13,6	21,0	(2) 22	125,9	21270	6620	31830	3697	351	(2) 7.5	6055	(2) 350	25450	5737	2120	349	140
ATC-DC-1240M-35-2EF	3651	14,9	21,8	(2) 22	124,6	21270	6620	31830	4213	368	(2) 7.5	6055	(2) 350	25450	5737	2120	349	175
ATC-DC-1240N-25-2EF	3808	13,7	21,0	(2) 30	138,5	21430	6620	31980	3697	351	(2) 7.5	6055	(2) 350	25600	5737	2120	349	140
ATC-DC-1240N-35-2EF	3880	15,1	22,0	(2) 30	137,1	21430	6620	31980	4213	368	(2) 7.5	6055	(2) 350	25600	5737	2120	349	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

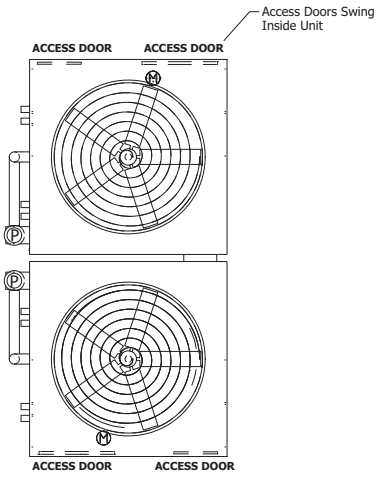
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

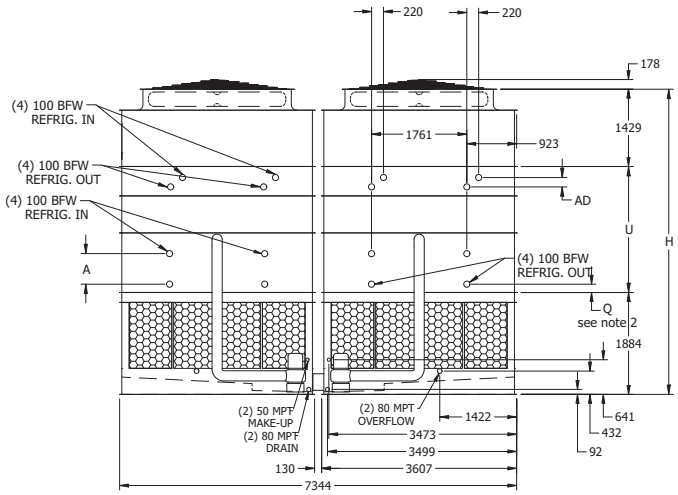
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

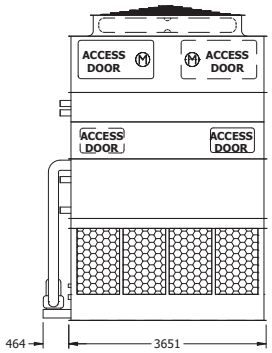
ATC-DC Models 2412K-25 to 2412L-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak***™ Dry Coil outlets and **Ellipti-*fin***® Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.







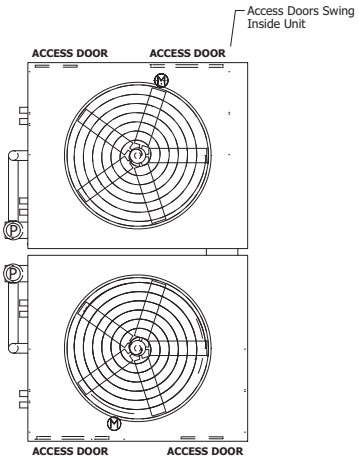
Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump✦			Dimensions (mm) ▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	Total m^3/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-2412K-25-1EF	1768	16,3	22,8	(2) 15	77,1	10400	2540	16580	1527	129	(2) 4	3710	(2) 300	12820	5223	1910	140	140
ATC-DC-2412K-35-1EF	1801	18,2	24,1	(2) 15	76,3	10400	2540	16580	1841	139	(2) 4	3710	(2) 300	12820	5223	1910	140	175
ATC-DC-2412L-25-1EF	1837	16,4	22,9	(2) 18.5	83	10430	2540	16610	1527	129	(2) 4	3710	(2) 300	12850	5223	1910	140	140
ATC-DC-2412L-35-1EF	1872	18,5	24,2	(2) 18.5	82,2	10430	2540	16610	1841	139	(2) 4	3710	(2) 300	12850	5223	1910	140	175
ATC-DC-2412J-25-2EF	2184	11,6	19,7	(2) 11	68,6	13520	4120	19780	2267	210	(2) 4	3710	(2) 300	16020	5432	2119	349	140
ATC-DC-2412J-35-2EF	2225	12,8	20,5	(2) 11	68	13520	4120	19780	2582	220	(2) 4	3710	(2) 300	16020	5432	2119	349	175
ATC-DC-2412L-25-2EF	2422	12,0	19,9	(2) 18.5	81,4	13600	4120	19870	2267	210	(2) 4	3710	(2) 300	16110	5432	2119	349	140
ATC-DC-2412L-35-2EF	2468	13,6	21,0	(2) 18.5	80,6	13600	4120	19870	2582	220	(2) 4	3710	(2) 300	16110	5432	2119	349	175

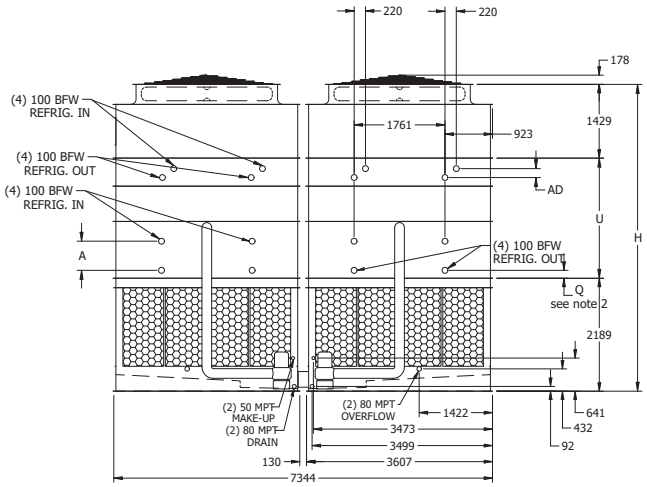
* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.
** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)
*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.
† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.
▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

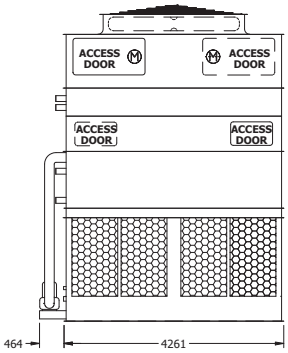
ATC-DC Models
2414K-25 to 2414M-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak*™** Dry Coil outlets and **Ellipti-*fin*®** Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.







Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump✦			Dimensions (mm)▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	Total m³/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-2414K-25-1EF	1906	17,2	23,4	(2) 15	85,3	11650	2880	18910	1751	150	(2) 4	4315	(2) 300	14560	5528	1910	140	140
ATC-DC-2414K-35-1EF	1942	18,9	24,5	(2) 15	84,5	11650	2880	18910	2125	162	(2) 4	4315	(2) 300	14560	5528	1910	140	175
ATC-DC-2414L-25-1EF	1997	17,2	23,4	(2) 18.5	91,9	11680	2880	18940	1751	150	(2) 4	4315	(2) 300	14590	5528	1910	140	140
ATC-DC-2414L-35-1EF	2035	19,0	24,6	(2) 18.5	91	11680	2880	18940	2125	162	(2) 4	4315	(2) 300	14590	5528	1910	140	175
ATC-DC-2414K-25-2EF	2504	12,8	20,5	(2) 15	83,6	15260	4690	22630	2627	250	(2) 4	4315	(2) 300	18280	5737	2119	349	140
ATC-DC-2414K-35-2EF	2551	14,0	21,3	(2) 15	82,8	15260	4690	22630	3001	262	(2) 4	4315	(2) 300	18280	5737	2119	349	175
ATC-DC-2414L-25-2EF	2625	12,9	20,5	(2) 18.5	90,1	15290	4690	22650	2627	250	(2) 4	4315	(2) 300	18300	5737	2119	349	140
ATC-DC-2414L-35-2EF	2675	14,3	21,4	(2) 18.5	89,2	15290	4690	22650	3001	262	(2) 4	4315	(2) 300	18300	5737	2119	349	175
ATC-DC-2414M-25-2EF	2703	13,1	20,7	(2) 22	95,7	15340	4690	22710	2627	250	(2) 4	4315	(2) 300	18350	5737	2119	349	140
ATC-DC-2414M-35-2EF	2754	14,7	21,7	(2) 22	94,8	15340	4690	22710	3001	262	(2) 4	4315	(2) 300	18350	5737	2119	349	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

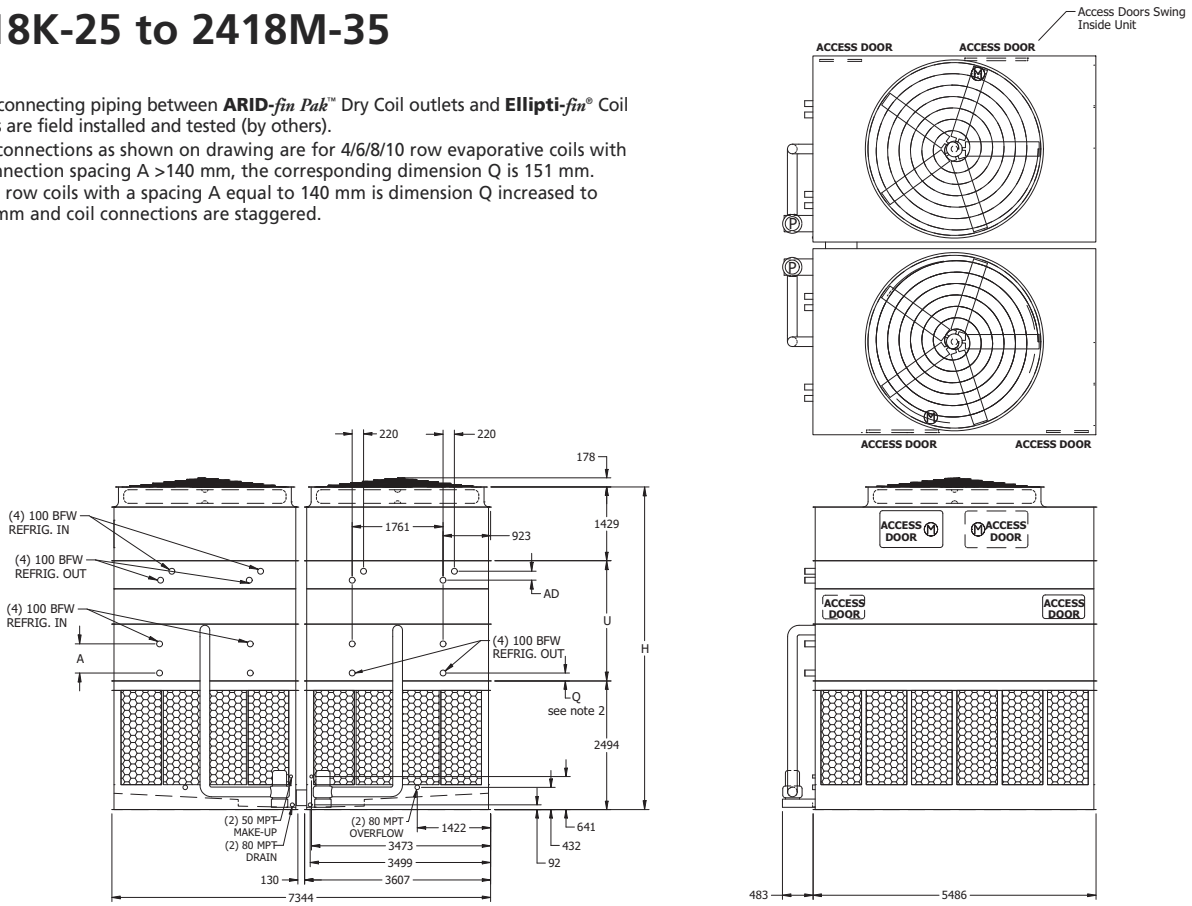
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

ATC-DC Models 2418K-25 to 2418M-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak*™** Dry Coil outlets and **Ellipti-*fin*®** Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.



Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump✦			Dimensions (mm) ▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	Total m³/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-2418K-25-1EF	2385	17,3	23,4	(2) 15	105,4	14550	3660	23840	2208	184	(2) 5.5	5450	(2) 300	18240	5832	1909	140	140
ATC-DC-2418K-35-1EF	2430	18,8	24,5	(2) 15	104,3	14550	3660	23840	2687	200	(2) 5.5	5450	(2) 300	18240	5832	1909	140	175
ATC-DC-2418L-25-1EF	2513	17,3	23,4	(2) 18.5	113,5	14570	3660	23870	2208	184	(2) 5.5	5450	(2) 300	18280	5832	1909	140	140
ATC-DC-2418L-35-1EF	2560	18,9	24,5	(2) 18.5	112,4	14570	3660	23870	2687	200	(2) 5.5	5450	(2) 300	18280	5832	1909	140	175
ATC-DC-2418M-25-1EF	2625	17,1	23,3	(2) 22	120,6	14620	3660	23910	2208	184	(2) 5.5	5450	(2) 300	18320	5832	1909	140	140
ATC-DC-2418M-35-1EF	2675	18,9	24,5	(2) 22	119,4	14620	3660	23910	2687	200	(2) 5.5	5450	(2) 300	18320	5832	1909	140	175
ATC-DC-2418K-25-2EF	3141	12,8	20,4	(2) 15	103,3	19360	6060	28780	3315	311	(2) 5.5	5450	(2) 300	23190	6042	2119	349	140
ATC-DC-2418K-35-2EF	3200	13,9	21,1	(2) 15	102,3	19360	6060	28780	3794	327	(2) 5.5	5450	(2) 300	23190	6042	2119	349	175
ATC-DC-2418L-25-2EF	3319	12,7	20,4	(2) 18.5	111,3	19380	6060	28810	3315	311	(2) 5.5	5450	(2) 300	23220	6042	2119	349	140
ATC-DC-2418L-35-2EF	3381	13,9	21,2	(2) 18.5	110,2	19380	6060	28810	3794	327	(2) 5.5	5450	(2) 300	23220	6042	2119	349	175
ATC-DC-2418M-25-2EF	3462	12,7	20,4	(2) 22	118,3	19430	6060	28860	3315	311	(2) 5.5	5450	(2) 300	23270	6042	2119	349	140
ATC-DC-2418M-35-2EF	3527	14,1	21,3	(2) 22	117,1	19430	6060	28860	3794	327	(2) 5.5	5450	(2) 300	23270	6042	2119	349	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

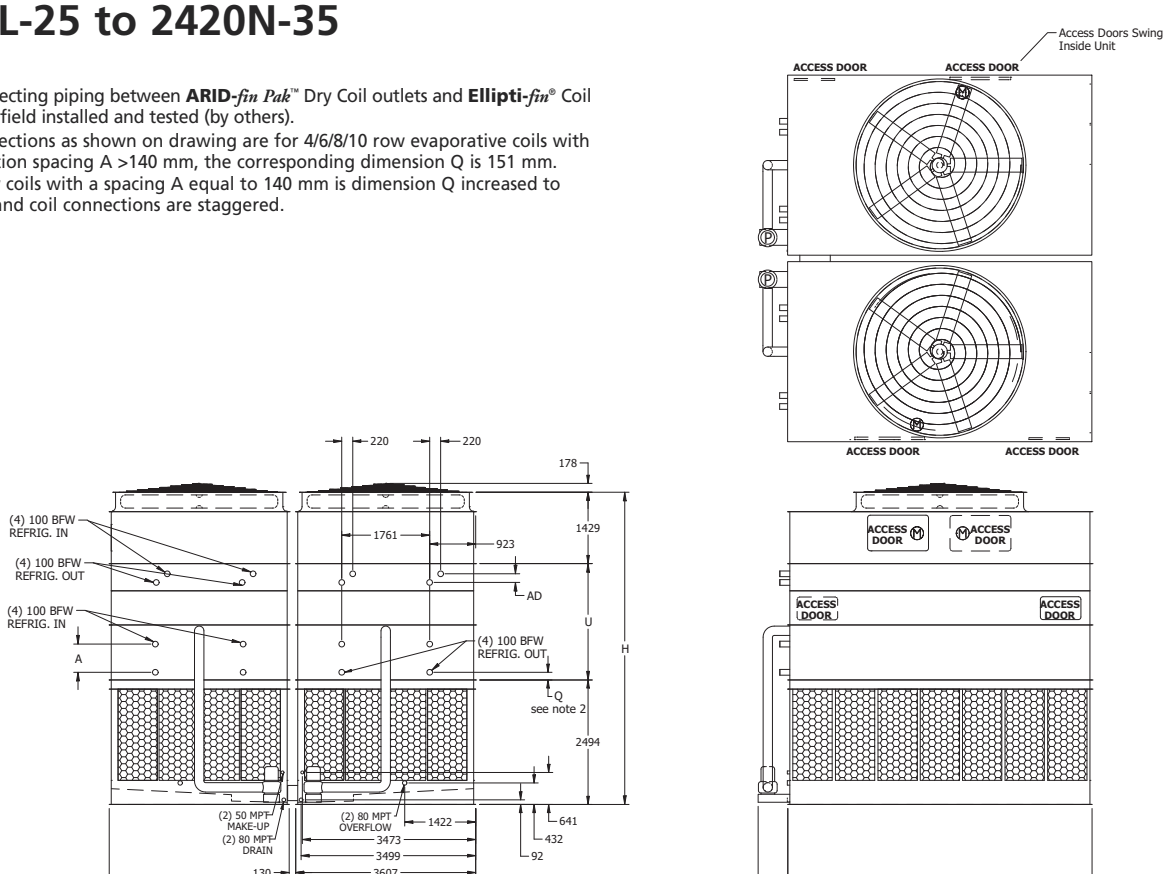
✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

ATC-DC Models 2420L-25 to 2420N-35

Notes:

1) Interconnecting piping between **ARID-*fin Pak*™** Dry Coil outlets and **Ellipti-*fin*®** Coil inlets are field installed and tested (by others).
2) Coil connections as shown on drawing are for 4/6/8/10 row evaporative coils with a connection spacing A >140 mm, the corresponding dimension Q is 151 mm. For 2 row coils with a spacing A equal to 140 mm is dimension Q increased to 317 mm and coil connections are staggered.



Model No.	Capacity (kW)	Dry Switch Temp. (°C)		Fans		Weights (kg)			Coil Volume (l)	NH_3 Operating Charge*** (kg)	Spray Pump (kW)	Remote Pump✦			Dimensions (mm) ▲			
	Wet Capacity	75% Wet Capacity	50% Wet Capacity	kW	Total m^3/s	Shipping	Heaviest Section	Operating				Liters** Req'd (4)	Conn. Size (DN)	Operating Weight	Height H	Middle U	Wet Coil A	Dry Coil AD
ATC-DC-2420L-25-1EF	2630	17,8	23,8	(2) 18.5	120,8	16000	4010	26400	2447	197	(2) 7.5	6055	(2) 350	20020	5832	1909	140	140
ATC-DC-2420L-35-1EF	2679	19,4	24,8	(2) 18.5	119,6	16000	4010	26400	2971	214	(2) 7.5	6055	(2) 350	20020	5832	1909	140	175
ATC-DC-2420M-25-1EF	2735	17,8	23,8	(2) 22	128,4	16050	4010	26450	2447	197	(2) 7.5	6055	(2) 350	20070	5832	1909	140	140
ATC-DC-2420M-35-1EF	2786	19,4	24,9	(2) 22	127,1	16050	4010	26450	2971	214	(2) 7.5	6055	(2) 350	20070	5832	1909	140	175
ATC-DC-2420N-25-1EF	2907	17,7	23,7	(2) 30	141,3	16200	4010	26600	2447	197	(2) 7.5	6055	(2) 350	20220	5832	1909	140	140
ATC-DC-2420N-35-1EF	2962	19,6	25,0	(2) 30	139,9	16200	4010	26600	2971	214	(2) 7.5	6055	(2) 350	20220	5832	1909	140	175
ATC-DC-2420L-25-2EF	3444	13,6	20,9	(2) 18.5	118,4	21250	6630	31810	3697	351	(2) 7.5	6055	(2) 350	25430	6042	2119	349	140
ATC-DC-2420L-35-2EF	3509	14,7	21,7	(2) 18.5	117,2	21250	6630	31810	4213	368	(2) 7.5	6055	(2) 350	25430	6042	2119	349	175
ATC-DC-2420M-25-2EF	3561	13,7	21,1	(2) 22	125,9	21300	6630	31860	3697	351	(2) 7.5	6055	(2) 350	25480	6042	2119	349	140
ATC-DC-2420M-35-2EF	3628	15,0	21,9	(2) 22	124,6	21300	6630	31860	4213	368	(2) 7.5	6055	(2) 350	25480	6042	2119	349	175
ATC-DC-2420N-25-2EF	3791	13,8	21,1	(2) 30	138,5	21450	6630	32010	3697	351	(2) 7.5	6055	(2) 350	25630	6042	2119	349	140
ATC-DC-2420N-35-2EF	3862	15,2	22,1	(2) 30	137,1	21450	6630	32010	4213	368	(2) 7.5	6055	(2) 350	25630	6042	2119	349	175

* kW at standard conditions: 35,7°C condensing, -6,7°C suction and 25,6°C Twb.

** Liters shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation (300 mm would normally be sufficient.)

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R22, 1.98 for R134A and 1.7 for R404A, R410A and R507A.

† Heaviest section is the coil section.
Dimensions are subject to change. Do not use for pre-fabrication. Quantity of coil connections subject to change based on refrigerant and design conditions.

✦ When a remote sump arrangement is selected, the spray pump, suction strainer and associated piping are omitted; the unit is provided with an oversized outlet to facilitate drainage to the remote sump.

▲ Unit dimensions and coil connections may vary slightly from catalog. See factory certified prints for dimensions, quantity of coil connections, and piping configuration. Coil connections are 4" bevel for weld (BFW). Other connection types such as grooved for mechanical coupling or flanged are also available as options.

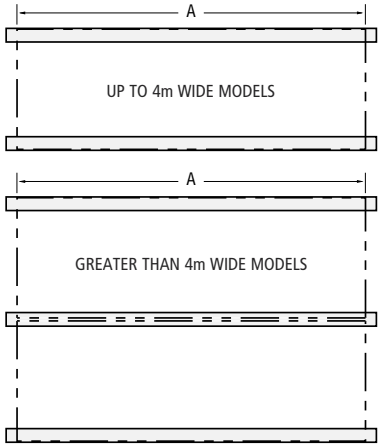
RECOMMENDED STEEL SUPPORT

ATC-DC

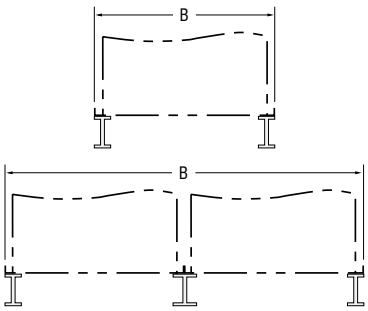
The recommended support for EVAPCO ATC-DC is structural "I" beams located under the outer flanges and running the entire length of the unit. The unit should be elevated to allow access underneath the unit and to the roof below. Mounting holes 19 mm in diameter are located in the bottom flanges of the pan section to provide for bolting to the structural steel. (Refer to certified drawings from the factory for bolt hole locations.)

Beams should be level before setting the unit in place. Do not level the unit by shimming between the unit and the structural steel. Dimensions weights and data are subject to change without notice. Refer to the factory certified drawings for exact dimensions.

Plan Views



End Elevations



SUPPORTING STEEL DIMENSIONS		
ATC-DC	**A**	**B**
89G-25 to 89J-35	2731	2388
812H-25 to 812K-35	3651	2388
814I-25 to 814K-35	4261	2388
818G-25 to 818J-35	5486	2388
821H-25 to 821I-35	6401	2388
	A	B
1024I-25 to 1024L-35	7366	2991
1036I-25 to 1036M-35	11036	2991
	A	B
1612H-25 to 1612K-35	3651	4906
1614I-25 to 1614K-35	4261	4906
	A	B
1012I-25 to 1012L-35	3651	2991
1018I-25 to 1018M-35	5486	2991
	A	B
2012I-25 to 2012L-35	3651	6112
2018I-25 to 2018L-35	5486	6112
	A	B
1212J-25 to 1212L-35	3651	3607
1214K-25 to 1214M-35	4261	3607
1218K-25 to 1218M-35	5486	3607
1220L-25 to 1220N-35	6096	3607
1224K-25 to1224L-35	7366	3607
1228K-25 to 1228M-35	8585	3607
1236K-25 to 1236M-35	11036	3607
1240L-25 to 1240N-35	12256	3607
	A	B
2412K-25 to 2412L-35	3651	7344
2414K-25 to 2414M-35	4261	7344
2418K-25 to 2418M-35	5486	7344
2420L-25 to 2420N-35	6096	7344

ATC-DC

SPECIFICATIONS

FACTORY FABRICATED INDUCED DRAFT ATC-DC EVAPORATIVE CONDENSER

GENERAL

Furnish and install factory assembled evaporative condenser of induced draft counterflow design with a horizontal multiple side air entry and a vertical air discharge.
The unit shall be completely factory assembled and conform to the specifications and schedules.

The condenser shall reject _____ kW of heat with_____as refrigerant and _____°C condensation temperature at a wet bulb temperature of _____ °C .

Optional: (If dry operating conditions are different than the wet operating conditions)
Each unit shall also reject ____kW with____°C condensation temperature at a ___ °C entering dry bulb temperature.

The total fan power should not exceed _____kW.
The total pump power should not exceed _____ kW.

The total overall unit dimensions should not exceed the following:
Length: _____ mm Width: _____ mm Height: _____ mm

The maximum operating weight should not exceed _____ kg.

The unit will be delivered in three parts: the bottom basin - louver section, the coil section and the fan section.
The unit sections shall be joined together with elastic sealer and bolted together with corrosion resistant fasteners.

Approved manufacturer **Evapco – model ATC-DC_____**

Thermal Performance – Performance Warranty

The unit shall be capable of performing the thermal duties as shown in the schedule and on drawings and its design thermal rating shall be certified by the manufacturer.

Applicable Standards

CTI ATC 128 Test Code for Measurement of Sound from Water Cooling Towers

Submittals

a) Shop drawings: submit shop drawings indicating dimensions, weight loadings and required clearances.
b) Product data: submit manufacturers technical product data, original selection printouts and clearance requirements.
c) Complete noise data sheet for the selected evaporative condenser(s).
d) Maintenance data for the evaporative condenser(s).
e) The manufacturer shall provide factory test run certificates of the fans and fan motor.

Product Delivery – Storage and Handling

a) The contractor shall make the provisions for proper storage at site before installation and handle the product per the instructions of the manufacturer.
b) Once installed provide the necessary measures to keep units clean and protected from any dust and mechanical damage.

Quality Assurance

a) The manufacturer shall have a quality assurance system in place which is certified by an accredited registrar and complying with the requirements of ISO 9001. This is to guarantee a consistant level of product and service quality.
b) Manufacturers without ISO 9001 certification are not acceptable.

Warranty

a) The products will be warranted for a period of two years from the date of shipment.

PRODUCT

Construction – Corrosion Resistance

STANDARD EXECUTION – GALVANIZED STEEL Z-725

a) The structure and all steel elements of the pan and casing shall be constructed of Z 725 hot dip galvanized steel for long life and durability. Alternatives with lower zinc layer thickness and external paint or coating are not accepted as equal.
b) The strainer shall be made of stainless steel type 304L.
c) During fabrication all panel edges shall be coated with a 95% pure zinc compound.
d) Casing materials shall be of non flammable construction only.

OPTIONAL EXECUTION – BASIN IN STAINLESS STEEL AISI 304L

a) The structure and all steel elements of the Basin and Louver section up to the water level shall be made of stainless steel AISI 304L. Cold water basin will be a welded stainless steel construction.
b) Alternatives with hot dip galvanized steel and epoxy coatings in lieu of the stainless steel AISI 304L are not considered to be equal and are not accepted.
c) All other steel components of the casing shall be constructed of Z 725 hot dip galvanized steel for long life and durability. Alternatives with lower zinc layer thickness and external paint or coating or FRP materials are not accepted as equal.
d) The strainer shall be made of stainless steel AISI 304L.
e) During fabrication all galvanized steel panel edges shall be coated with a 95% pure zinc compound.
f) Casing materials shall be of non flammable construction only.

OPTIONAL EXECUTION – COMPLETE UNIT IN STAINLESS STEEL AISI 304L [except heat exchange coil(s)]

a) The structure and all steel elements shall be made of AISI 304L. Cold water basin will be a welded stainless steel construction.
b) Alternatives with hot dip galvanized steel and epoxy coatings in lieu of the AISI 304L are not considered to be equal and are not accepted.
c) The strainer shall be made of stainless steel AISI 304L.
d) Casing materials shall be of non flammable construction only.

Construction – Seismic and wind load resistance

a) The structural design must withstand 1g seismic or 6.94 kN/m²
b) Evaporative Condensers must be independently certified according to IBC 2012

Basin Section

Evaporative Condenser Basin

a) Standard basin accessories include: overflow, drain, strainer and brass make up valve with plastic float ball.
b) The strainer shall be made of AISI 304.
c) The entire pan area shall incorporate a sloped and stepped basin design to prevent sediment built up, biological film and standing water.
d) Upper and lower basin bottoms shall be sloped to provide drainage of the complete basin section.
e) The basin can be inspected while the unit is in operation with the fan(s) and pump(s) running.

Air Inlet Louvers

a) The air inlet louvers shall be constructed of UV inhibited polyvinyl chloride (PVC), mounted in easily removable frames for easy access to the basin.
b) The louvers shall be at four sides to provide easy access to the basin interior.
c) The louvers shall have a minimum of two changes in air direction to prevent splash out and block direct sunlight from entering the basin.
d) The louvers will have a 19 mm opening to prevent debris from entering the basin.

SPECIFICATIONS

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Water Circulation Pump(s)

a) The pump(s) shall be a close coupled, centrifugal type with mechanical seal, installed vertically at the factory to allow free drainage on shut down.
b) A _____ kW totally enclosed motor(s) suitable for outdoor service shall be furnished.
c) The motor shall be suitable for the following power supply: ____volts, ____hertz and ____ phase and ____ kW.

Evaporative Coil Section

Evaporative Coil

a) The condenser shall use internal enhanced heat exchange coils of an elliptical tube design to obtain lower air flow resistance and allow higher water loadings around the tubes. Each row of the heat exchanger coil shall be provided with elliptical spiral fins to increase the evaporative and dry thermal performance of the unit.
b) The heat transfer coil(s) shall be made of all prime surface, encased in a steel framework and hot dip galvanized after fabrication as a complete assembly.
c) The tubes shall be arranged in a self spacing, staggered pattern in the direction of air flow for maximum heat transfer efficiency and minimum pressure drop.
d) The heat exchange coils shall be air pressure tested under water.
e) The design and manufacturing process shall be approved and in accordance with the "Pressure Equipment Directive" – PED 97 / 23 EC.
f) The manufacturer shall be responsible for the manufacturing and performance testing of the entire heat transfer coil. This is to assure single source responsibility.
g) The casing shall totally encase the complete coil section to protect the complete coil from direct atmospheric contact.
h) The pressure drop of the process fluid through the coil shall not exceed ____kPa.

Sensible Heat Transfer Coil

a) The sensible heat transfer coil is installed in the air discharge of the condenser and will be piped in series with the wet coil.
b) The sensible heat transfer coil shall be constructed of stainless steel tubes.
c) To maximize heat transfer, tubes shall be arranged in a staggered design and be equipped with fins.
d) The fins should have fully drawn collars to maintain consistent fin spacing and continuous surface contact over the entire tube.
e) The fins should be made of Aluminum / Magnesium to have good corrosion resistance and the distance between the fins should be 2,5 mm to avoid clogging.
f) The coils should be placed in a heavy-duty galvanized Z-725 frame. The frame should have full collars to support the coil correctly and avoid damaging the tubes.
g) The dry coil shall be pneumatically tested under water in according with PED 97/23 EC.

Fan Section

Water Distribution

a) The water distribution system shall be completely enclosed and protected from sunlight exposure, environmental elements and debris. Water distribution systems with direct exposure to the environment are not allowed.
b) The spray header and branches shall be constructed of Schedule 40, Polyvinyl Chloride (PVC) pipe for corrosion resistance.
c) The water shall be distributed over the coil by precision molded *ZM II*™ spray nozzles with large minimum orifice openings and integral sludge ring to eliminate clogging.
d) The nozzles shall be threaded into the water distribution piping to assure positive positioning and easy removal for maintenance. Snap in or strapped on nozzles are not accepted.

Drift Eliminators

a) The drift eliminators shall be constructed of entirely inert polyvinyl (PVC) that has been specially treated to resist ultra violet light.
b) Assembled in easily handled sections, the eliminator blades shall be spaced on 25 mm centers and shall incorporate three changes in air direction to assure efficient removal of entrained moisture from the discharge air stream.
c) The maximum drift rate shall not exceed 0,001 % of the circulating water rate.
d) The drift eliminators shall be Eurovent OM-14-2009.

Access Door

a) A large hinged access door shall provide access to the fan section for maintenance.
b) A second access door shall provide access to the evaporative coil section.

Mechanical Equipment

Axial Propeller Fan(s) (Standard)

a) Fan shall be heavy duty wide chord axial propeller type, statically balanced and constructed of extruded aluminum alloy blades.
b) Fans shall be installed in a closely fitted cowl with venturi air inlet for maximum fan efficiency.
c) The fans shall utilize a soft connect blade to hub design, compatible with variable speed drives, to avoid transmission of vertical forces to the unit structure.
d) Each fan blade shall be individually adjustable.
e) The fan cowl shall be covered with a heavy gauge hot dip galvanized steel wire fan guard.
f) The fan – drive system (fan – drive – motor) shall be factory mounted, adjusted and undergo a trial run in the factory before shipment.

Axial Propeller Fan(s) - Low Sound Fan (Optional)

a) Fan shall be heavy duty wide chord axial propeller type, statically balanced and constructed of extruded aluminum alloy blades.
b) Fans shall be installed in a closely fitted cowl with venturi air inlet for maximum fan efficiency.
c) The fans shall utilize a soft connect blade to hub design, compatible with variable speed drives, to avoid transmission of vertical forces to the unit structure.
d) Each fan blade shall be individually adjustable.
e) The fan cowl shall be covered with a heavy gauge hot dip galvanized steel wire fan guard.
f) The fan – drive system (fan – drive – motor) shall be factory mounted, adjusted and undergo a trial run in the factory before shipment.

Axial Propoller Fan(s) - Super Low Sound Fan (Optional)

a) Fan shall be extremely wide chord axial, one piece heavy duty propeller type, statically balanced and made of FRP.
b) Fans will be installed in a closely fitted cowl with venturi air inlet for maximum fan efficiency.
c) The fan cowl shall be covered with a heavy gauge hot dip galvanized steel wire fan guard.
d) The fan – drive system (fan – drive – motor) shall be factory mounted, adjusted and undergo a trial run in the factory before shipment.
e) The fans are high efficiency and operate with no loss of thermal performance

Bearings and Drive

a) The fan shaft (s) shall be supported by heavy duty, self aligning ball type bearings with cast iron housings and lubrication fittings for maintenance.
b) The bearings shall be rated for an L-10 life of 75000 to 135000 hours.
c) The fan drive sheaves shall be aluminum alloy.
d) The belt shall be a multigroove belt system, constructed of neoprene with polyester cords and designed for 150% of the motor nameplate horsepower.
e) The grease fittings shall be extended to a location just inside the access door.

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SPECIFICATIONS

Motor (2.4 and 4.9 meter wide Models)

a) The fan motor shall be Totally Enclosed Fan Cooled (TEFC), squirrel cage, ball bearing type motor.
b) The motor shall be specially designed for cooling tower use with moisture protection on the winding, shaft and bearings.
c) The motor shall be minimum IP 55 degree of protection, Class F insulation, Service Factor 1 and selected for the appropriate cooling tower duty and the correct ambient temperature but minimum 40°C.
d) Motors bearings shall be double sealed non-relubricable or external grease nipples shall be provided.
e) The motor shall be mounted on an adjustable heavy duty steel motor base.
f) A hinged protective cover shall shield the motor and sheave from the weather.
g) The motor power supply shall be ____ volts, ____ hertz and ___ phase.

Motor (3, 3.6, 6.1 and 7.3 meter wide Models)

a) The fan motor shall be Totally Enclosed Air Over (TEAO), squirrel cage, ball bearing type motor.
b) The motor shall be specially designed for cooling tower use with moisture protection on the windings, shaft and bearings.
c) The motor shall be minimum IP 55 degree of protection, Class F insulation, Service Factor 1 and selected for the appropriate cooling tower duty and the correct ambient temperature but minimum 40°C.
d) Motor bearings shall be double sealed non-relubricable or external grease nipples shall be provided.
e) The motor shall be mounted on an adjustable heavy duty steel motor base.
f) The motor base shall be able to swing to the outside of the unit for repair or removal.
g) The motor power supply shall be ____ volts, ____ hertz and ____ phase.

Sound Levels

The maximum sound pressure levels (dB) measured 1.5 m 45° from the top of the condenser operating at full fan speed shall not exceed the sound levels detailed below.

Location	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	dB(A)
Fan discharge									
Air inlet /end									

ACCESSORIES (Optional)

Electric Heaters

a) The condenser cold water basin shall be provided with an electric heater package to prevent freezing of the water in the cold water basin, while the pump is shut down.
b) The electric heater package includes: electric heater element(s), thermostat and low water level cutoff.
c) The heaters shall be selected to maintain 4°C basin water temperature at _____°C ambient
d) The heater(s) shall be ____V / ____ phase / ____ Hz electric power supply.

Three Probe Electric Water Level Control Package

a) The coolig tower manufacturer shall provide an electric water level control package instead of the mechanical float valve arrangement.
b) The package consist of the following elements :
- Multiple heavy duty stainless steel 316 static sensors mounted in a stilling chamber outside the unit. Electrodes or sensors mounted inside the unit are not accepted as their operation will be disturbed by the moving water in the basin.
- An ABS, IP 56 case contains all the contactors for the different level probes and will provide an output signal of two relays for automatic filling.
- The power supply to the control package is 24 Vac / 230 Vac - ____ Hz.
- A weather protected solenoid valve (PN16) for the water make up ready for piping to a water supply with pressure between 140 kPa and 340 kPa.

Five Probe Electric Water Level Control Package

a) The coolig tower manufacturer shall provide an electric water level control package instead of the mechanical float valve arrangement.
b) The package consist of the following elements :
- Multiple heavy duty stainless steel 316 static sensors mounted in a stilling chamber outside the unit. Electrodes or sensors mounted inside the unit are not accepted as their operation will be disturbed by the moving water in the basin.
- An ABS, IP 56 case contains all the contactors for the different level probes and will provide an output signal of two relays for automatic filling and two relays for high and low alarm.
- The power supply to the control package is 24 Vac / 230 Vac - ____ Hz.
- A weather protected solenoid valve (PN16) for the water make up ready for piping to a water supply with pressure between 140 kPa and 340 kPa.

Vibration Switch

a) A vibration limit switch shall be installed on the mechanical equipment support and wired into the control panel. The purpose of this switch is to interrupt power to the motor in the event of excessive vibration.
b) The switch shall be adjustable for sensitivity and shall require manual reset.

Vertical Access Ladders

a) Vertical ladder with safety cage which provide easy access to the water distribution system and drive components shall be provided with the condenser(s).
b) The ladder will be completed with a safety cage for safety purposes.
c) Ladder safety cage shall meet OSHA - CE - BS requirements.

Service Platforms

a) The condenser shall be supplied with a double external service platform.
b) The external service platforms will be self supporting and include access ladders to the platforms.
c) The external service platforms will be installed in front of the all access doors.
d) The platform shall meet OSHA - CE - BS requirements.

Motor Davit

a) The condenser shall be supplied with a motor davit to facilitate the removal of fan motor(s) and fan(s).
b) The davit and braket are constructed of aluminum and are mounted on the side of the unit.
c) The fan motor davit ships loose with the unit and is installed in the field.

Water Silencer

a) The water silencers are located in the falling water area of the cold water basin.
b) The water silencers will reduce the overall sound levels 4 dB (A) to 7 dB (A) measured at 1.5 m from the side or end of the unit, when the fans are running, and 9 dB (A) to 12 dB (A) when fans are off.
c) The water silencers are constructed of lightweight PVC sections and can be easily removed for access to the basin area.
d) The water silencers will have no impact on the unit's thermal performance.

Notes:

ATC-DC

Notes:

Notes:

Evapco Products are Manufactured Worldwide

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