Smart Series
Open Cooling Tower

Smart Series Benefits

Baltimore Aircoil Company (BAC) is the world's largest and leading supplier of evaporative heat transfer and thermal energy management equipment. The pace of innovation from BAC continues to accelerate, all for the purpose of providing cutting edge products that meet dynamic market needs. In an effort to fulfill small to medium project demand as short lead time, easy installation, safe maintenance, BAC is excited to launch Smart Series cooling tower, providing trusted, simplified and safe solutions for customers.

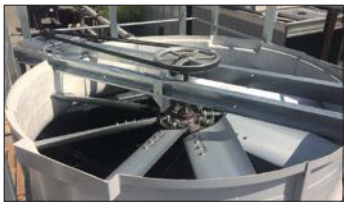
100% Thermal Performance

All Smart Series models are certified by the Cooling Technology Institute (CTI)

Strict CTI testing procedures ensure that all Smart Series towers are 100% thermal performance

Reliable Year-Round Operation

- Heavy-duty G-235 galvanized steel frame and casing panels are effective to strengthen structure and resist corrosion
- Unique water proof sealed bearings are ideal for use inside of moist cooling tower
- Aluminum fan provides longer service life compared to FRP fan
- Aluminum driven sheave provides better corrosion resistance and longer belt service life
- Cooling tower duty fan motor provides reliable performance and longer service life
- Unique gravity water distribution system achieves even water distribution per project requirement
- Standard hot water basin covers prevent debris from entering the hot water basin, protecting the system.
- Large capacity cold water basin and anti-vortexing water outlet strainer prevent air entrainment and ensure the reliability of the system



High-efficiency Fan System

Easy Installation

- Small models can be factory assembled in two pieces and containerized to ensure uniform quality with minimum field assembly
- All units can be one piece rigged to minimize labor and time on site
- Unique construction design ensures robust structure as well as minimized parts which shorten installation labor and time
- Multiple structural support options are available to simplify assembly on site

Smart Rigging

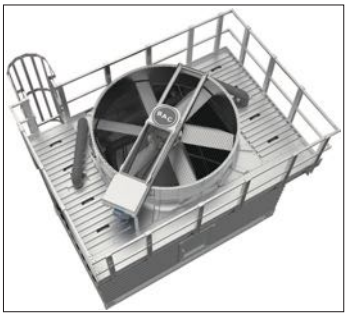
Easy Maintenance

Simplicity

- Split bearings are easy to lubricate and replace
- Light aluminum driven sheave simplifies maintenance
- Fill surface is elevated above the sloped cold water basin floor to facilitate flushing of dirt and debris
- Standard access door and internal walkway provide easy maintenance access
- Extended lubrication lines are available for lubricate fan shaft bearings

Safety

- All safety options are designed compliant with OSHA requirements
- Standard galvanized ladder, optional fan deck handrail and safety cage provide safe access to deck
- Standard hot water basin covers can support concentrated load of 91kg and serve as maintenance platform
- Cold water basin is sloped to eliminate stagnant water and reduce biological growth



Ladder, Handrail (With Extended Platform) And Safety Cage

OSHA® Occupational Safety and Health Administration

Environmentally Friendly

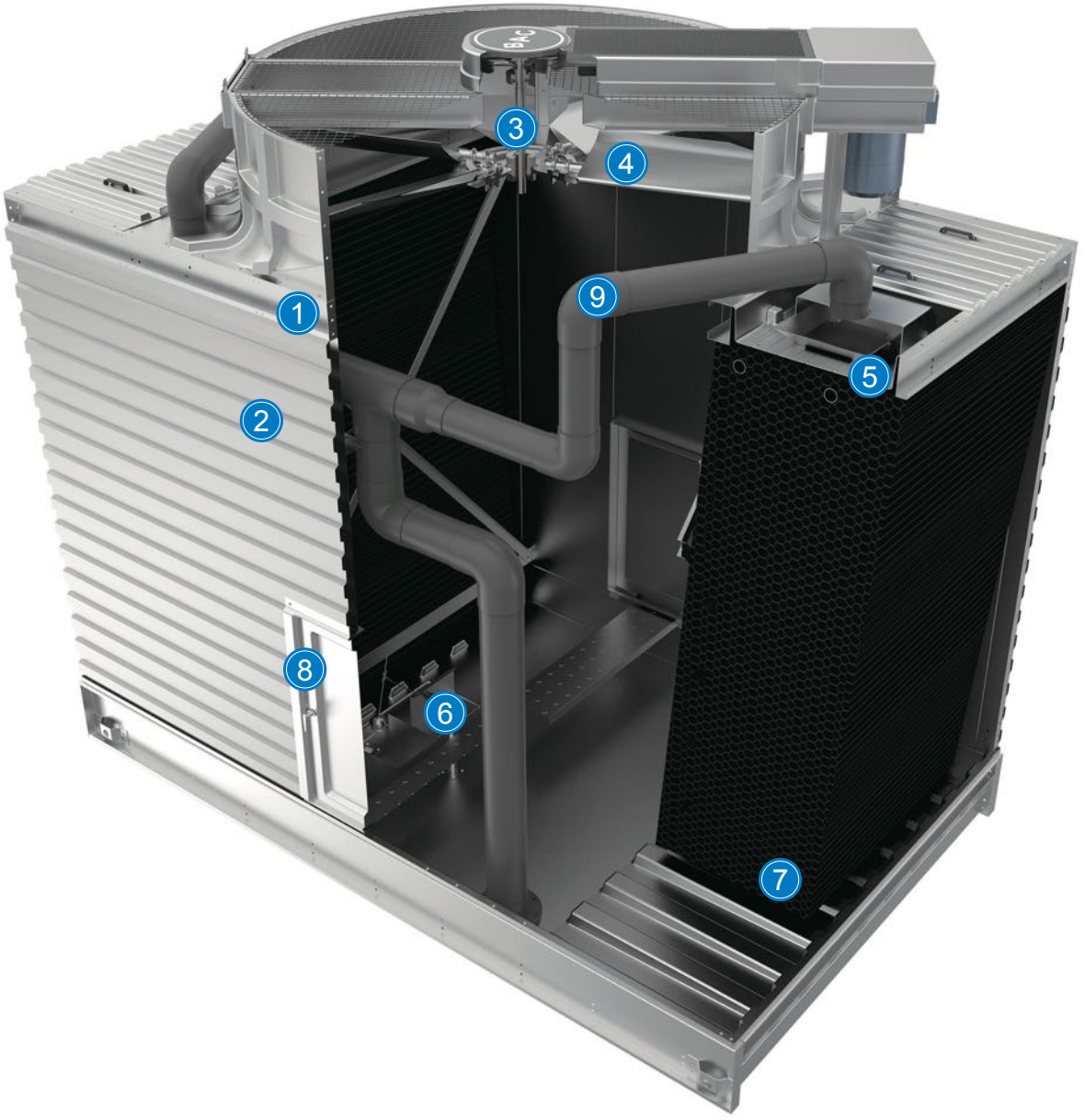
Environmentally Friendly Materials

- Usage ratio of recyclable materials substantially over other competitor products
- Construction made of heavy duty G235 galvanized steel

Low Sound Operation

- High efficiency aluminum alloy fans provide industry leading sound performance
- BAC's professional selection program provides accurate sound power and sound pressure data

Smart Series Construction Details



1 Heavy-Duty Construction

- Heavy-guage G235 hot-dip galvanized steel frame
- Robust and corrosion resistant

2 Casing Panels

- Corrosion resistant
- Maintenance Free
- UV resistant finish

3 Fan Drive System

- Split waterproof sealed bearings ensure longer life and easier installation and maintenance
- Anti-corrosion aluminum alloy fan sheave, easier installation, and simplified maintenance
- Premium quality bushing reduces the contact corrosion for the shaft

4 Axial Fan

- Quiet operation
- High efficiency
- Corrosion resistant, longer service life

5 Unique Designed Optiflow™ Heat Transfer System

- Patented hot water basin and pre-distributor made of FRP with remarkable corrosion resistance
- Even water distribution
- Special designed HELIX 3S fills with integral louvers and drift eliminators
  - High efficiency heat transfer surface
  - Polyvinyl chloride (PVC)
  - Level 5 flame propagation rate
  - Fire-resistant materials, oxygen index of 32

6 Water Outlet Strainer

- Easy to install, clean and maintain
- Corrosion resistant 304 stainless steel
- Anti-vortexing design protects the HVAC system

7 Cold Water Basin

- Sloped cold water basin to eliminate stagnant water and reduce biological growth
- Large capacity to hold more pull down volume and prevent air entrainment
- Remarkable corrosion resistant FRP

8 Access Door

- Easy and safe access to the interior of the unit
- Large, inward hinged access door on the end wall

9 Smart Connect™ Piping Arrangements(Option)

- Easy piping arrangement on site
- Good looking tower exterior

Smart
Custom Features & Options

Materials of Construction

Standard Construction

To assure long-life, a G-235 hot-dip galvanized steel frame with fiberglass reinforced polyester (FRP) casing panels are used as the standard material of construction. The structural integrity of the unit is provided by its strong steel frame. With proper maintenance and water treatment, G-235 galvanized steel and FRP will provide an excellent service life under the operating conditions normally encountered in comfort cooling and industrial applications.

Stainless Steel (Option)

Optional 304 stainless steel frame and fastener.

Standard FRP Casing Panles

Used with BAC's durable frame construction, FRP casing panels offer a more durable corrosion resistant unit

G235 Galvanized Steel Casing Panels (Option)

G235 galvanized steel casing panels are also available with more UV resistance, ensure longer service life.

Standard FRP Casing Panels

G235 galvanized steel casing panels

Drive System Options

The fan drive system provides the cooling air necessary to reject unwanted heat from the system to the atmosphere. All BAC drive systems use premium efficient cooling tower duty motors. Cooling tower duty motors are specially designed for the harsh environment inside a cooling tower and have permanently lubricated bearings, drastically decreasing the maintenance requirement of the motor.

BAC belt drive systems are the most durable and maintenance friendly drive systems on the market, including single nut adjustment for belt tensioning to make belt tensioning simple.

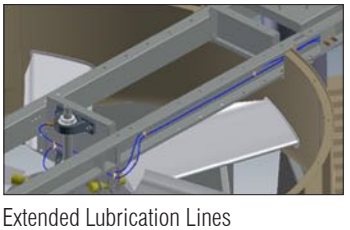
Vibration Cutout Switch (Option)

A factory mounted vibration cutout switch is available to effectively protect against rotating equipment failure. BAC can provide a mechanical vibration cutout switch in a NEMA 4 enclosure to ensure reliable protection.

Extended Lubrication Lines (Option)

Extended lubrication lines are available for lubrication of fan shaft bearings.

Vibration Cutout Switch



Extended Lubrication Lines

Cold Water Basin

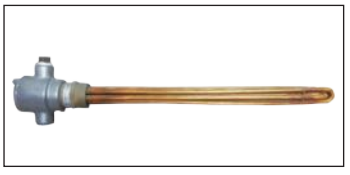
The cooling tower water collects in the cold water basin which provides the required head pressure for the cooling system pump. During operation, BAC's hygienic cold water basin eliminates any stagnant water zones, which are susceptible to biological growth.

Standard Mechanical Water Level Control

Mechanical make-up valves must operate continuously in the moist and turbulent environment existing within evaporative cooling equipment. Due to this environment, the operation of the valve must be simple, and the valve must be durable. BAC's high quality mechanical water level control assembly is standard with all units and has been specially designed to provide the most reliable operation while being easy to maintain.

Basin Heaters (Option)

Evaporative cooling equipment exposed to below freezing ambient temperatures require protection to prevent freezing of the water in the cold water basin when the unit is idle. Electric immersion heaters, which maintain 4.4°C (40°F) water temperature, are a simple and inexpensive way of providing such protection.



Basin Heater

Heater kW Data

Model Number	-17.8°C (0°F)Ambient Heaters		-28.9°C (-20°F)Ambient Heaters	
	Number of Heaters	kW per Heater	Number of Heaters	kW per Heater
SMT-0713	1	8	1	10
SMT-0814	1	10	1	15

Water Distribution System

The Smart Series cooling tower utilizes a low pump head gravity distribution system. Patented water distribution orifice arrangement can be customized according to project flow requirement to distribute water more even.

Optiflow™ Heat Transfer System

Patented hot water basin and pre-distributor made of FRP with remarkable corrosion resistance ensure even water distribution. Special designed HELIX 3S fills with integral louvers and drift eliminators, is optimized to provide the most efficient thermal performance.

Smart Connect™ Piping Arrangement (Option)

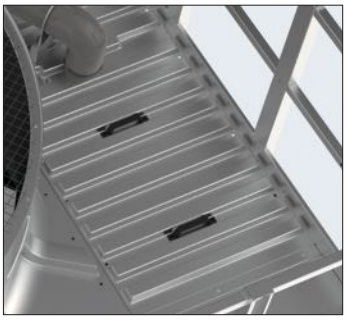
The Smart Connect™ piping arrangement simplifies water inlet piping on the Smart Series by automatically balancing the flow within each cell, eliminating the need for flow balancing valves. A single water inlet connection, located on bottom of each unit, eliminates the need for overhead piping and piping supports.It reduces installation costs and reduces potential for errors during field piping fabrication.

Smart Connect™ Piping Arrangement

Smart
Custom Features & Options

- ***Standard Hot Water Basin Covers***

  Standard hot water basin covers prevent debris from entering the hot water basin, ensuring the reliability of the system. They also assist in lower sound levels.



Standard Hot Water Basin Cover

Sound Options

Recognition of the importance of sound reduction is growing and can be a very important design criterion for any project. BAC maintains the widest selection of sound mitigating options in the market place and can provide the most cost effective option to meet any requirement.

- ***Standard Fan***

  The fan provided for all Smart Series cooling towers is selected to optimize low sound levels and maximize thermal performance.

- ***Low Sound Fan (Option)***

  The Low Sound Fan option reduces sound up to 7dBA. Adding a high solidity fan decreases fan speeds, which proportionally decreases sound levels. The thermal performance with the Low Sound Fan has been certified in accordance with CTI Standard STD-201.

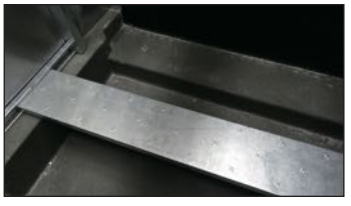
Standard Fan

Access Options

BAC provides a broad offering of access options. Our evaporative equipment is designed to be the most easily maintained for sustaining capacity over a longer life. All BAC platforms and ladders are OSHA compliant to ensure personnel safety and code compliance.

- ***Standard Internal Walkway***

  An internal walkway is standard, allowing access to the spacious plenum area for maintenance and inspection of the cold water basin, make-up, fill, and drive system.



Standard Internal Walkway

- ***Standard External Ladder, Optional Handrail And Safety Cage***

  Standard external ladder provides access to key components on deck. Optional safety cage and handrail are available. The handrail will equipped with fan deck extension to ease maintenance across fan cylinder. All BAC platforms and ladders are OSHA compliant to ensure personnel safety and code compliance. Working at heights must comply with government occupational safety code.

External Ladder, Handrail (With Extension Platform) And Safety Cage

Multi-Cell Unit Options

Special care must be taken for multi-cell installations to ensure balanced water levels in the cold water basins across cells. If measures are not put in place to ensure balanced basin water levels, a potential exists that one basin may overflow and dump water, while the water level in another tower goes low and requires make-up. This leads to unnecessary water waste. To prevent this from occurring, BAC provides equalizer for balancing water levels and recommends that the installation be designed to ensure balanced flows to and from each tower.

- ***Equalizer** (Option)*

  Equalizer connections are available as an option for multi-cell cooling towers in lieu of a flume box. Use of an equalizer allows for easy isolation of a cell for winter operation, maintenance, or inspection while continuing system operation.

Shipping and Rigging

The Smart Series cooling tower is designed to ship in two ways to meet any requirement.

- ***Knockdown Units***

  Knockdown units are available for jobs where access to the cooling tower location is limited by elevators, doorways, or similar obstacles, where lifting methods impose very strict weight limits, or where the shipping cost of a fully assembled tower is excessive. All materials of construction and design features are the same as those of a factory assembled unit.

- ***Factory-Assembled Units** (Option)*

  BAC units are factory-assembled to ensure uniform quality with minimum field assembly. Each unit has been designed with rigging and assembly in mind and includes features to minimize the number of tools required and installation time.

- ***Rigging Guides***

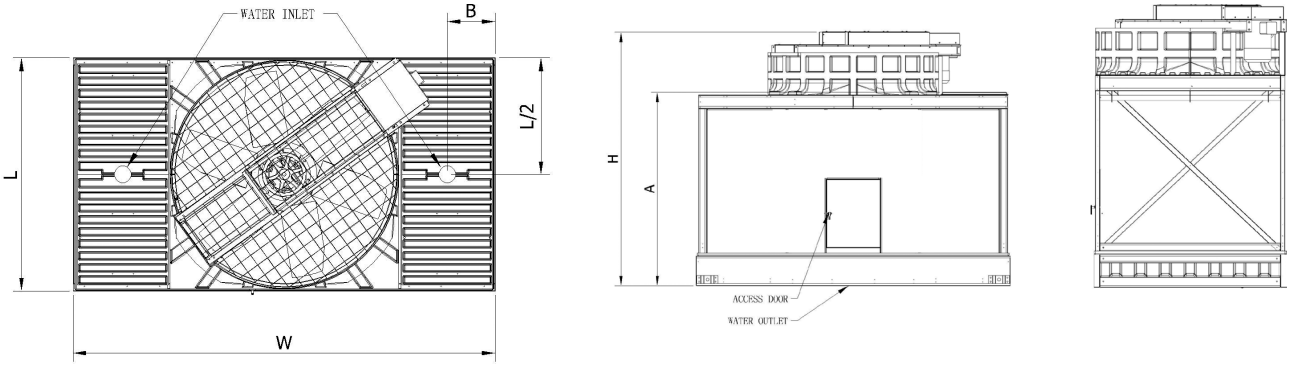
  Rigging guides make rigging much simpler and reducing the time required.

Standard Factory Assembly

Smart Series Engineering Data

Engineering Data

Do not use for construction. Refer to factory certified dimensions. This catalog includes data current at the time of publication,which should be confirmed at the time of purchase. More details can be found at www.BaltimoreAircoil.cn



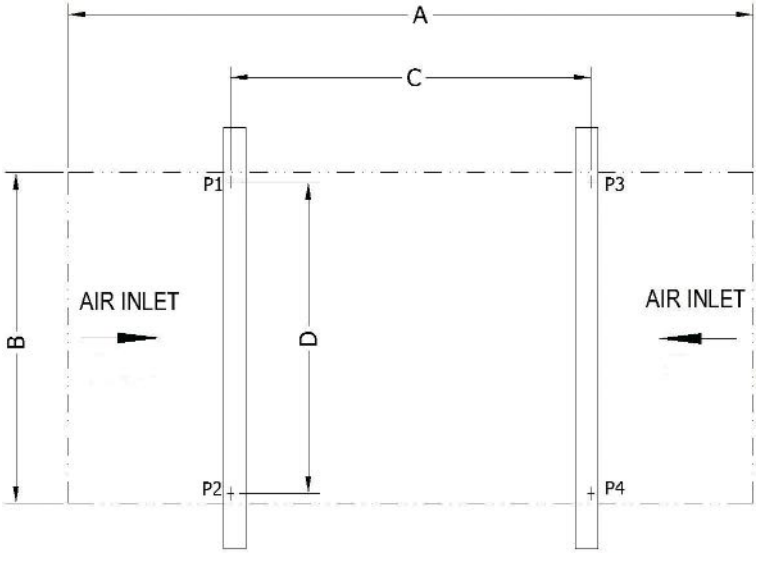
Model Number	Nominal Tonnage[1]	Motor(KW)	Weights (kg)		Dimensions(mm)					Connection Sizes					
			Shipping	Operating	L	W	A	H	B	Make-up(in)	Top Inlet(mm)	Bottom Inlet(mm)	Outlet(mm)	Drain(in)	Overflow(in)
SMT-0713-04G	126	2.2	1181	3102	2216	4007	2075	2844	458	1.5	125	150	150	2	3
SMT-0713-04H	154	4	1192	3113											
SMT-0713-04J	173	5.5	1218	3139											
SMT-0713-05G	138	2.2	1275	3306	2216	4007	2481	3250	458	1.5	125	150	150	2	3
SMT-0713-05H	169	4	1287	3317											
SMT-0713-05J	189	5.5	1313	3343											
SMT-0713-05K	210	7.5	1341	3371											
SMT-0713-06H	178	4	1379	3515	2216	4007	2887	3656	458	1.5	125	150	150	2	3
SMT-0713-06J	198	5.5	1405	3540											
SMT-0713-06K	220	7.5	1433	3568											
SMT-0713-07H	188	4	1472	3712	2216	4007	3293	4062	458	1.5	125	150	150	2	3
SMT-0713-07J	208	5.5	1498	3738											
SMT-0713-07K	230	7.5	1531	3771											
SMT-0713-07L	264	11	1576	3817											
SMT-0814-06H	207	4	1560	4215	2584	4362	2887	3656	458	1.5	160	200	200	2	3
SMT-0814-06J	231	5.5	1586	4240											
SMT-0814-06K	257	7.5	1597	4252											
SMT-0814-06L	293	11	1643	4297											
SMT-0814-07H	210	4	1663	4442	2584	4362	3293	4062	458	1.5	160	200	200	2	3
SMT-0814-07J	235	5.5	1689	4468											
SMT-0814-07K	266	7.5	1700	4479											
SMT-0814-07L	310	11	1746	4525											

Notes:

1. Nominal tons of cooling represents 3 GPM (0.684 m^3/h) of water from a 95°F (35°C) to 85°F (29.4°C) at a 78°F (25.6°C)entering wet-bulb temperature.
2. Operating weight is based on the water level in the cold water basin at overflow height.
3. Unless otherwise indicated, all connections 3" (76mm) and smaller are male pipe thread, and connections 4"(102mm)and larger are PN 1.0MPa flange connections. Piping support (by others) is required at the point of 500mm from outlet &equalizer connection.

The recommended support arrangement for the Smart Series Cooling Tower consists of parallel I-beams positioned as shown on the drawings. Besides providing adequate support, the steel also serves to raise the unit above any solid foundation to assure access to the bottom of the tower.

Model Number	Dimensions(mm)			
	A	B	C	D
SMT-0713-04*	4007	2216	1547	2026
SMT-0713-05*	4007	2216	1547	2026
SMT-0713-06*	4007	2216	1547	2026
SMT-0713-07*	4007	2216	1547	2026
SMT-0814-06*	4362	2584	1894	2394
SMT-0814-07*	4362	2584	1894	2394



Notes:

1. Support beams and anchor bolts to be selected and installed by others.
2. All support steel must be level at the top.
3. Beams must be selected in accordance with accepted structural practice. Maximum deflection of beam under unit to be 1/360 of span, not to exceed 1/2".
4. If point vibration isolation is used with multi-cell towers, the isolators must be located under the support steel, not between the support steel and the cooling towers.
5. If you need factory assembled units, consult your local BAC representative.

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www.BaltimoreAircoil.cn

Rm.2204, Litong Plaza, No.1350 North Sichuan Rd., Shanghai, PRC, 200080

Telephone: (86-21) 6072 3600 Fax: (86-21) 6072 3610

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