



# TO CREATE VALUE FOR CUSTOMERS



YHD Square Counter-flow Cooling Tower  
**THERMAL PERFORMANCE ABSOLUTELY GUARANTEED**



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YHD





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## COMPANY PROFILE

Hunan Yuanheng Technology Development Co., Ltd (hereinafter referred to as: Yuanheng) specializes in research and development, production, sales and service of central air-conditioning and cooling towers. Cooling tower includes cross-flow, counter-flow, industrial, and sewage lines; central air conditioning includes air-source water-water heat pumps and water source heat pumps etc. The company has R&D and production facility of cooling tower and central air conditioning in Changsha, production facility of cooling tower in Hefei, with annual capacity of 2,300,000 tons water-flow of cooling towers and 1000 units (sets) of central air conditioning.

Adhering to the development strategy of "Innovation-oriented, Quality-Establishment, Mutual Benefit and Mutual Sharing", cooperating with Tsinghua University, Hunan University and a number of domestic research institutions, the company has established a first-class R & D team and a first-class cooling tower, central air conditioning laboratory, now owns thirty five patents. Our products have passed professional tests of national authoritative organizations, every index is better than national standards. Meanwhile, the cooling tower has been achieved international credibility of CTI certification of STD-201 standard, which indicates our cooling tower's thermal performance and product quality up to international standards.

Yuanheng has sales and after-sales service in large and medium-sized cities at home, timely and fully provide industry knowledge spreading, project consultation and after-sale protection, a large number of national and provincial key projects and domestic influential projects have chosen Yuanheng product. To now, Yuanheng products have been exported to more than 30 countries and regions.

Yuanheng is a high-tech enterprise, famous trademark, and the products have been listed in the first batch of independent innovation products directory in Hunan province. The company has achieved ISO9001, ISO14001, GB/T28001 certification, "made in Hunan, worthy of trust" key unit of China Quality Long March Publicity Activity, continuous access to "Credible" Business Unit of Hunan Province by municipal and provincial Industrial and Commercial Bureau issued, obtained AAA Enterprise Credit Rating, is CTI (American Cooling Technology Association) member, member of Chinese Association of refrigeration, member of China general machinery industry association cooling equipment branch.

Yuanheng adheres to customer-centric philosophy and continuous improvement in product development, production, services and management, and provides the most valuable products and services to customers and partners.

Cooperative partner





## CREDIT AND QUALIFICATION

GB/T19001-2008/ISO9001:2008 Quality Management System Certification

ISO14001 Environmental Management System Certification

ISO28001 Occupational Health Safety Management System Certification

Year 2006~2014 Annual "Credible" Business Unit of Hunan Province

"Made in Hunan, worthy of trust" Key Unit of China Quality Long March Publicity Activity

Top 10 Enterprises of Cooling Tower in China

China's Top Ten Most Influential Brand of Cooling Tower

Valuing People's Livelihood·Top 10 Enterprises of Cooling Tower in China

CTI (American Cooling Technology Institute) Member

Member of Chinese Association of Refrigeration

High-Tech Enterprise

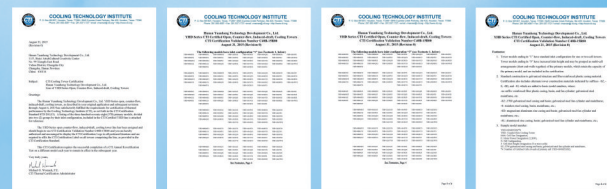
China's Energy Conservation Product Certification

China's Water-saving Product Certification

One of Drafting Units of "Energy-Saving Technology Specification of Cooling Tower"

Full-Performance Testing Platform of Cooling Tower in line with American CTI Standard  
and Chinese National Standard

Standard Certification of USA Cooling Technology Institute (CTI) STD-201



Quality Management System Certificate, Environmental Management System  
Certification and Occupational Health Safety Management System Certification

## »»» Excellent performance

### > Performance standard CTI, GB, CQC

- Entire line accords with CTI standard STD - 201 (11) and fulfills the certification.
- YHD line counter-flow cooling tower is designed according to requirements of the national standard GB/T 7190-7190 "glass fiber reinforced plastic cooling tower", the technological design accords with GB/T 50392-50392 "Process design specification mechanical draft cooling tower", and through the inspection of National Quality Supervision and Inspection Center of Fiberglass Products, all parameters are better than national standards, and obtain the inspection report.
- Part models are according to CQC31-36-2012 "Technical specification of energy-saving certification for open type cooling tower", meet the requirements of CQC31-439113-2012 "energy-saving certification rules of cooling tower". And obtain China energy conservation product certificate issued by China Quality Certification Center.
- Entire line meets the requirements of CQC32-439112-2012 "Cooling tower water saving certification rules". And obtain China's water-saving product certificate issued by the China Quality Certification Center.

### > High Efficiency Thermal Performance 100% or higher

- By selecting packing fill of high heat dispersion ability, with reasonable ventilation rate, optimize the intake path and the way of water distribution, make water heat exchange more fully, thus ensuring excellent thermal performance. Energy efficient and reliable cooling tower makes the safe operation of saving energy and reducing consumption, and eliminates hidden dangers.
- Entire YHD line is designed higher than China national standard; ensure the thermal performance of 100% or more. Entire line pass CTI test, thermal Performance can be absolutely guaranteed.

### > Low power consumption Performance-per-watt as low as 0.026 KWH/m<sup>3</sup>

The performance-per-watt of YHD line covers 0.026 to 0.065 kw · h/m<sup>3</sup>, suitable for different applications, field and industry. Rated power energy consumption of part models is far lower than the national standard, the lowest energy input under the premise of guaranteeing highest cooling efficiency. Obtain China energy conservation product certification.

### > Low drift Drift loss as low as 0.00017%

Utilize efficient drift eliminator at air outlet and special intake grille at air inlet: to make sure the drift loss to minimum during cooling tower's runtime, to 0.00017% or less. Ultra-low drift loss reduces water loss and prevents the spread of legionella bacteria. And obtain China's water-saving product certification.

### > Low noise Environmental protection Quiet

- Entire YHD line is equipped cooling tower dedicated aerofol blade fan, and obtain a patent (patent number: ZL200620052717.6), quieter cap structure at the distal end of fan blades, effectively reduce air flow vortex between fan and wall of fan cylinder, which can reduce noise by 3-8 db (A).
- Special intake grille at air inlet prevents water splashing, and effectively reduce noise of the drops of water splash by 3-5 db (A).
- For other noise reduction measures, see optional solutions or contact your sales executives

## »»» Innovative Design



### > All-round precise selection

For the application in different occasions, conditions, and industry, we provide a variety of models for your choice. Due to different operation characteristics of cooling tower under different condition, if the selection of cooling tower inappropriate, it will cause short of cold effect or too big allowance.

### > Even water distribution system

Optimized design of loop water distribution system, water path varied partially, to ensure that every nozzle obtains relatively close water pressure, so that water yield of each nozzle water yield is close to consistent. Reasonable spacing between nozzles, nozzle and packing fills, is to ensure that water is sprayed evenly in the wide water pressure change, and lower operation noise and vibration.

### > Intake grille and drift eliminator of 0.00017% drift loss

- Abandon traditional louvered structure, YHD line utilize intake grille, of special drift eliminator structure and made of PVC material. Drift loss of inlet close to "0", at the same time air intake evenly, and can effectively reduce the splash drop noise by 3-5 db (A).
- Utilize high-efficiency low-resistance reinforced arc-shaped drift eliminator, made of modified PVC, support is made of A85 material, water resistance of drift eliminator is less than 1mmH<sub>2</sub>O, drift loss is 0.001% or less. The physical and chemical performance indicators should comply with the relevant provisions of DL/T742-2001 "plastic parts technical conditions" released by Power Planning Bureau of Energy Department.
- The drift eliminator has the characteristic of high efficiency, small flow resistance, high strength, no deformation, easy installation and maintenance, which ensures the normal use of not less than 20 years.

### > Watertight collection basin

- Cold water collection uses Yuanheng 's patent (patent no.: ZL201420222116.5), through close slot connections between each other, with good adhesive and strong sealing sealant, ensures that no leak problem occurs in the process of long running, in order to avoid equipment halt or waste of water resources caused by leaking problem in use process. FRP has good acid, alkali and dirt resistance, strong adaptability, to ensure long-term reliable operation of cooling tower.
- Thick galvanized sheet of high corrosion resistance is also one option, use Z700 plate as the material of cold water collection basin. In order to meet higher requirement of corrosion resistance, stainless steel 304 or higher grade of stainless steel 316 are also good options.





## Special Quality

### Motor

Adopt dedicated outdoor three-phase asynchronous motor as standard, which is specially designed according to the proposed special environment of cooling tower operation, convenient to replace, disassembly and maintain, makes it long trouble-free operation, high efficiency, high protection grade (IP55), high insulation level (F grade), the cooling tower can continuous operate with low energy consumption long-term under the condition of damp and not environment (normal use life more than 15 years).

### Aerofoil fan

Adopt joint-ventured brand slow speed low noise cooling tower dedicated fan (patent number ZL 200620052517.6). Fan blades are made of aluminum alloy of superb corrosion resistance, bilayer structure, high performance, withstand high static pressure, high efficiency and energy saving, stable operation, high reliability, long maintenance cycle, long trouble-free operation time, service life of up to 15 years. Design for low speed operation, low operation noise. Pass through dynamic and static balance test at factory.  
To meet the higher requirements of noise, ultra-silent dedicated fan of "Howden" and "Colmac" are in option list, it makes the outlet noise below 60 db.

### Driving system

Standard transmission system is belt, adopt high quality special cooling tower dedicated belt, gear reducer, standard equipped is high quality waterproof non-slip v-belt of Japanese "MITSUBISHI" brand, scored pulley and belt offer dynamic and static balance test, conform to the requirements of stable operation; Reducer bearing is high precision Japanese NSK.  
Also gear is also good choice with higher transmission efficiency gear, but higher running noise.

### Packing fills

Packing fills are made of high-quality original raw material by vacuum molding, have high thermal performance, hydrophilic, chill-proof and corrosion resistance. Fill sheet is difficult combustion type material, oxygen index as high as 34.2, B1 level flame retardant national standards. It does not deform in 65 °C water temperature for 72 hours. Through the practice operation it proved that the packing fills can run at 50 °C for a long time.

### Tower body frame

Structural support of tower body framework is made of Q235 carbon steel of strong commonality and high strength, and adopt the most widely used and the most mature hot dip galvanization technology of the best outdoors anticorrosion performance, to ensure the stability and reliability of the structure in complex outdoor environment. Structure of optimized design, simple and economic, ensures good usability and smooth running, and also can bear larger wind, snow load, and stronger earthquake magnitude, the tower body reaches 150 kgf/m<sup>2</sup>, completely withstand twelve level typhoon (wind speed greater 240 km/h), and resist earthquake intensity of VIII.

In order to meet higher requirement of corrosion resistance, stainless steel 304 or higher grade of stainless steel 316 are also good options.

### Fastener

Tower body structure fasteners utilize stainless steel 304 material with corrosion resistant ability and high reliability. Because of large volume, knock-down, site erected, with running outdoors with water etc., also to meet the requirements of daily maintenance and repair, therefore put forward to higher request on the corrosion prevention.

Higher standard fasteners as option, such as S5316 etc.

### Shell casing

Shell casing contains UV stabilizer, weatherproof gel and color, anti-aging, no fading, the surface is bright and clean as a mirror, no crack, uniform color and luster, the body edge is neat, uniform in thickness, no delamination. The color keeps harmony with surrounding buildings, outer surface is in stripe shape, has the characteristics of non-glare, avoid the sun and light reflection and form of light pollution.

Thick galvanized sheet of high corrosion resistance is also an option, use Z700 plate as the material of casings. In order to meet higher requirement of corrosion resistance, stainless steel 304 or higher grade of stainless steel 316 are also good options.

## Selection Instruction



### Model Description

①	②	③	④	⑤	⑥	⑦
YHD	—	0606	E	X	1	blank
						* cell no.

- ①: Product line represents Counter-flow Cooling Tower
- ②: Product module represents the models in a block
- ③: Motor code represents equipped motor size
- ④: Fills' code represent matched fill height, X denotes the fill height 915mm, Y denotes the fill height 1220mm, Z denotes the fill height 1525mm
- ⑤: Tower height code: 1 represents the height of the unit when there is only single cell or two cells 's assembly, 3 represents the height of the unit when three or more cells' assembly in need
- ⑥: Suffix code: -no suffix is for reinforced fiber plastic casing, basin, and fan cylinder; galvanized steel mainframe etc  
-SZ is Z700 casing and basin, galvanized steel fan cylinder and mainframe;  
-S is for stainless steel casing, basin, fan cylinder and mainframe etc.;  
-SD is for magnesium aluminum zinc casing, basin; galvanized steel fan cylinder and mainframe etc;  
-SL is for aluminized zinc casing, basin; galvanized steel fan cylinder and mainframe etc.;
- ⑦: Multiple-cell code: Number of certified cells, for single cell, it's blank

### Example:

YHD-0606EX3SZ\*4  
YHD: counter-flow cooling tower line  
0606: in 0606 block,  
E: motor power 2.2kw,  
X: X type fill,  
3: the height in the one for multiple cells (above three cells) assembly's option,  
SZ: SZ is Z700 casing and basin, galvanized steel fan cylinder and mainframe;  
\*4: Number of certified cells (4 each of primary cell YHD-0606EX3SZ)

### Selection method

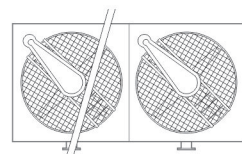
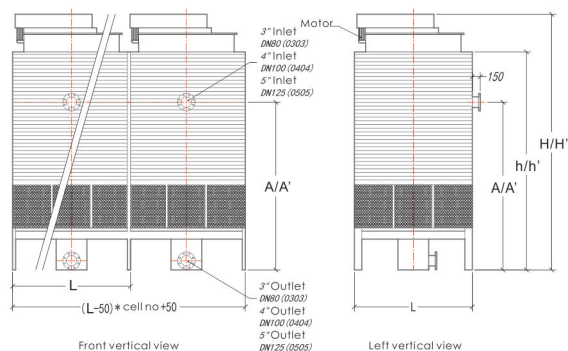
Firstly convert the flow rate on special condition into rate on standard condition according to selection curve. Fully understanding cooling tower 's features, then the selected model can reach the desired effect.  
We provide diverse selections, in the process of selection, combining its own characteristics of cooling tower, such as water distribution density, height of packing fills, electric power, etc., make a purposeful selection. For example, special selection for low flow at high temperature range, we suggest cooling tower models with fills code Z; for high flow at low temperature range, we suggest cooling tower models with fills code X; if there are requirements for noise, power consumption ratio, or price, please ask help from sales executive, we will select suitable models by comprehensive consideration of all the demands.

### Special requirements

If you have requirements on cooling tower besides mentioned above, please refer to subsequent optional accessories and see if you need, to better and more conveniently operate cooling towers, or for details about the optional accessories, contact your sales executive for help.

## Outline data

YHD-0303 0404 0505



Top plan view

### ★ Note:

Sizes of inlet and outlet vary with actual flow, in order to make water velocity in pipe within the recommended value. Unnecessary larger diameter make the user's cost higher.  
Inlet and outlet are provided according to the standard GB/T 9119-9119 raised face and PN1.0 Mpa national standard flange connector, the matched sealing washer, companion flange, bolts are provided by the user  
If other connector required, please contact with sales executive for advice

The following data for a single cell:

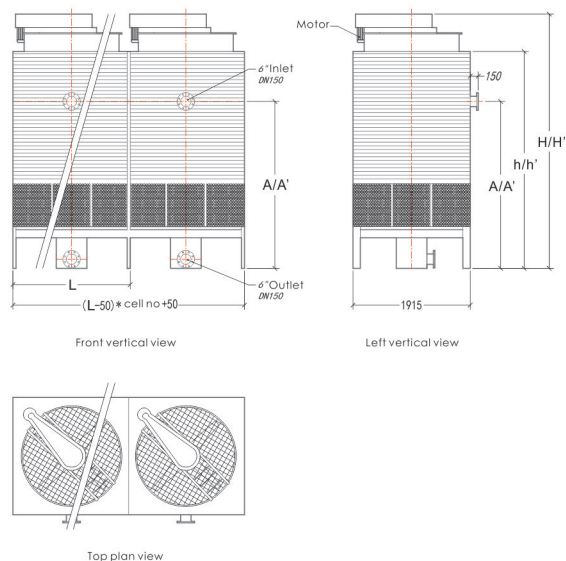
Model	Nominal flow rate 28°C	Nominal flow rate 27°C	L	Dimension * ①			Size * ②			Motor Kw	Fan φ-mm	Weight * ③				Weight * ④			
				h	H	A	h'	H'	A'			Dry weight	Wet weight	Dry weight	Wet weight	Dry weight	Wet weight	Dry weight	Wet weight
YHD-0303TX	16	18	1000	2590	3090	2134	2740	3240	2284	0.55	710	350	590	400	640				
YHD-0303GX	20	23								1.1		370	610	420	660				
YHD-0303TY	18	21		2890	3390	2134	3040	3540	2284	0.55		390	630	440	680				
YHD-0303GY	22	25								1.1		410	650	460	700				
YHD-0404TX	32	37	1305	2690	3190	2245	...	2890	3390	2445	1.5	450	840	530	930				
YHD-0404EX	36	41								2.2	1000	480	890	550	960				
YHD-0404SX	40	46								3		510	920	580	990				
YHD-0404FY	35	40								1.5		540	950	610	1020				
YHD-0404EY	39	45	1610	2990	3490	2245	3190	3690	2445	2.2	1200	570	980	640	1050				
YHD-0404SY	43	49								3		600	1010	670	1080				
YHD-0505EX	49	56								2.2		620	1240	720	1340				
YHD-0505SX	54	62		2790	3290	2360	...	2990	3490	2540	3	670	1290	770	1390				
YHD-0505MX	59	68	1610							4	1200	720	1340	820	1440				
YHD-0505EY	53	61								2.2		770	1390	870	1490				
YHD-0505SY	58	67		3090	3590	2360	3290	3790	2540	3		820	1440	920	1540				
YHD-0505MY	64	73								4		870	1490	970	1590				

### ★ Note:

- The data column is just for preliminary selection design. Please ask the sales executive for the latest drawings
- Nominal flow rate 28° C is the maximum flow value on the condition that inlet temperature 37° C, outlet temperature 32° C at wet bulb temperature 28° C, unit: m³/h;
- Nominal flow rate 27° C is the maximum flow value on the condition that inlet temperature 37° C, outlet temperature 32° C at wet bulb temperature 28° C, unit: m³/h;
- Size \* is the corresponding size of single cell or 2cells assembly( when combination code is 1), unit: mm;
- Size \* is the corresponding size of 3cells or more assembly( when combination code is 3), unit: mm;
- Weight \* is the corresponding weight of single cell or 2cells assembly( when combination code is 1), unit: Kg;
- Weight \* is the corresponding weight of 3cells or more assembly( when combination code is 3), unit: Kg.

## Outline data

### YHD-0606 0806



#### ★ Note:

Sizes of inlet and outlet vary with actual flow, in order to make water velocity in pipe within the recommended value. Unnecessary larger diameter make the user's cost higher.  
Inlet and outlet are provided according to the standard GB/T 9119-9119 raised face and PN1.0 Mpa national standard flange connector, the matched sealing washer, companion flange, bolts are provided by the user  
If other connector required, please contact with sales executive for advice

The following data for a single cell:

Model	Nominal flow rate 28°C	Nominal flow rate 27°C	L	Dimension * ①			Size * ②			Motor Kw	Fan φmm	Weight * ③		Weight * ④	
				h	H	A	h'	H'	A'			Dry weight	Wet weight	Dry weight	Wet weight
YHD-0606EX	62	71	1915	3540	4110	2724	3740	4310	2924	2.2	1500	810	1810	860	1860
YHD-0606SX	69	78								3		830	1830	880	1880
YHD-0606MX	75	86								4		850	1850	900	1900
YHD-0606LX	83	95								5.5		870	1870	920	1920
YHD-0606Y	62	77								2.2		860	1860	910	1910
YHD-0606SY	73	84								3		880	1880	930	1930
YHD-0606MY	81	93								4		900	1900	950	1950
YHD-0606LY	90	103								5.5		920	1920	970	1970
YHD-0606SZ	75	86								3		920	1920	970	1970
YHD-0606MZ	83	95								4		940	1940	990	1990
YHD-0606LZ	92	106	2525	4140	4710	3334	4340	4910	3534	5.5		960	1960	1010	2010
YHD-0606PZ	102	117								7.5		980	1980	1030	2030
YHD-0606EX	75	86								2.2		910	2210	960	2260
YHD-0606SX	83	95								3		940	2240	990	2290
YHD-0606MX	92	106								4		970	2270	1020	2320
YHD-0606LX	102	117								5.5		1000	2300	1050	2350
YHD-0606PY	113	130								7.5		1030	2330	1080	2380
YHD-0606SY	81	93								2.2		980	2280	1030	2330
YHD-0606LY	90	103								3		1010	2310	1060	2360
YHD-0606MY	100	115								4		1040	2340	1090	2390
YHD-0606LY	111	127	2525	3840	4410	3029	4040	4610	3229	4	1500	1070	2370	1120	2420
YHD-0606PY	121	140								7.5		1100	2400	1150	2450
YHD-0606EZ	84	96								2.2		1070	2370	1120	2420
YHD-0606SZ	93	107								3		1100	2400	1150	2450
YHD-0606MZ	103	116								4		1130	2430	1180	2480
YHD-0606LZ	115	132								5.5		1160	2460	1210	2510
YHD-0806PZ	126	145								7.5		1190	2490	1240	2540

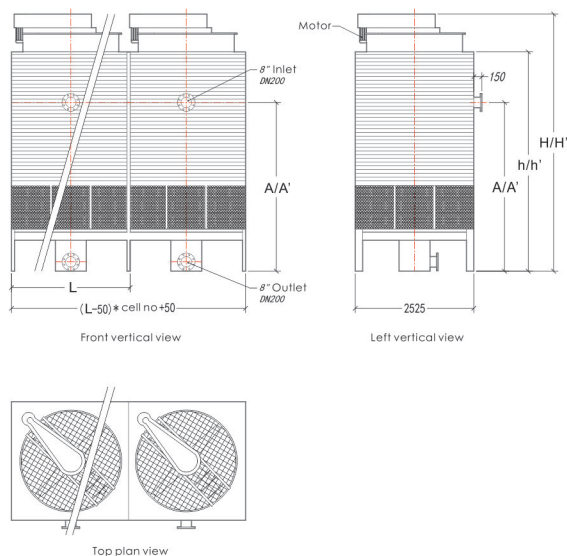
#### ★ Note:

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- Nominal flow rate 27° C is the maximum flow value on the condition that inlet temperature 37° C, outlet temperature 32° C at wet bulb temperature 28° C, unit: m³/h;
- Size \* is the corresponding size of single cell or 2cells assembly (when combination code is 1), unit: mm;
- Size \* is the corresponding size of 3cells or more assembly (when combination code is 3), unit: mm;
- Weight \* is the corresponding weight of single cell or 2cells assembly (when combination code is 1), unit: Kg;
- Weight \* is the corresponding weight of 3cells or more assembly (when combination code is 3), unit: Kg.



## Outline data

### YHD-0808 1008



#### ★ Note:

Sizes of inlet and outlet vary with actual flow, in order to make water velocity in pipe within the recommended value. Unnecessary larger diameter make the user's cost higher.  
Inlet and outlet are provided according to the standard G8/T 9119-9119 raised face and PN1.0 Mpa national standard flange connector, the matched sealing washer, companion flange, bolts are provided by the user  
If other connector required, please contact with sales executive for advice

The following data for a single cell:

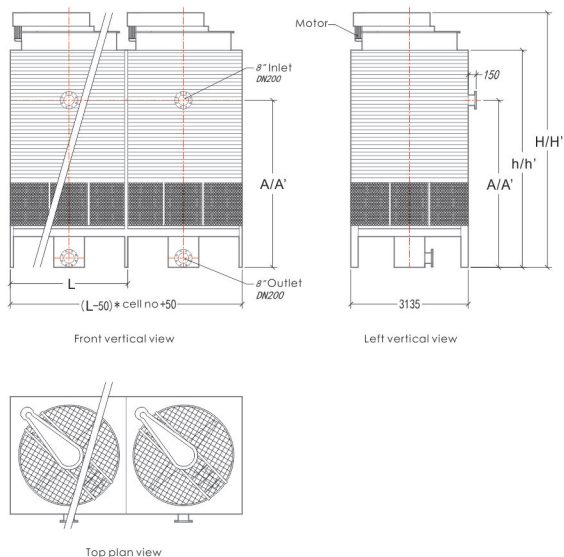
Model	Nominal flow rate		L	Dimension * ①			Size * ②			Motor Kw	Fan ③	Weight * ③		Weight * ④	
	28 °C	27 °C		h	H	A	h'	H'	A'			Dry weight	Wet weight	Dry weight	Wet weight
YHD-0808MX	110	126	2525	3640	4280	2850	3940	4560	3150	4	1800	1300	3100	1450	3250
YHD-0808LX	122	140								5.5		1350	3150	1500	3300
YHD-0808PX	135	155								7.5		1400	3200	1550	3350
YHD-0808DX	153	176								11		1450	3250	1600	3400
YHD-0808MY	130	138								4		1400	3200	1550	3350
YHD-0808LY	133	152								5.5		1450	3250	1600	3400
YHD-0808PY	147	169								7.5		1500	3300	1650	3450
YHD-0808DY	166	192								11		1550	3350	1700	3500
YHD-0808MZ	125	143								4		1550	3350	1700	3500
YHD-0808LZ	138	158								5.5		1600	3400	1750	3550
YHD-0808PZ	153	176	3135	4240	4860	3460	4540	5160	3760	7.5	1800	1650	3450	1800	3600
YHD-0808QZ	172	197								11		1700	3500	1850	3650
YHD-1008MX	130	149		3640	4280	2850	3940	4560	3150	4		1600	3800	1800	4000
YHD-1008LX	145	166								5.5		1680	3880	1880	4080
YHD-1008PX	160	184								7.5		1760	3960	1960	4160
YHD-1008QX	181	208								11		1840	4040	2040	4240
YHD-1008MY	142	162		3940	4560	3155	4240	4860	3455	4		1720	3920	1920	4120
YHD-1008LY	158	181								5.5		1800	4000	2000	4200
YHD-1008PY	175	201								7.5		1880	4080	2080	4280
YHD-1008DY	192	226								11		1960	4160	2160	4360
YHD-1008MZ	148	170		4240	4860	3460	4540	5160	3760	4		1870	4070	2070	4270
YHD-1008LZ	165	189								5.5		1950	4150	2150	4350
YHD-1008PZ	182	209								7.5		2030	4230	2230	4430
YHD-1008QZ	205	235								11		2110	4310	2310	4510

#### ★ Note:

- The data column is just for preliminary selection design. Please ask the sales executive for the latest drawings
- Nominal flow rate 28 ° C is the maximum flow value on the condition that inlet temperature 37 ° C, outlet temperature 32 ° C at wet bulb temperature 28 ° C, unit: m<sup>3</sup>/hr;
- Nominal flow rate 27 ° C is the maximum flow value on the condition that inlet temperature 37 ° C, outlet temperature 32 ° C at wet bulb temperature 28 ° C, unit: m<sup>3</sup>/hr;
- Size \* is the corresponding size of single cell or 2cells assembly( when combination code is 1), unit: mm;
- Size \* is the corresponding size of 3cells or more assembly( when combination code is 3), unit: mm;
- Weight \* is the corresponding weight of single cell or 2cells assembly( when combination code is 1), unit: Kg;
- Weight \* is the corresponding weight of 3cells or more assembly( when combination code is 3), unit: Kg.

## Outline data

### YHD-1010 1210



#### ★ Note:

Sizes of inlet and outlet vary with actual flow, in order to make water velocity in pipe within the recommended value. Unnecessary larger diameter make the user's cost higher.  
Inlet and outlet are provided according to the standard GB/T 9119-9119 raised face and PN1.0 Mpa national standard flange connector, the matched sealing washer, companion flange, bolts are provided by the user  
If other connector required, please contact with sales executive for advice

The following data for a single cell:

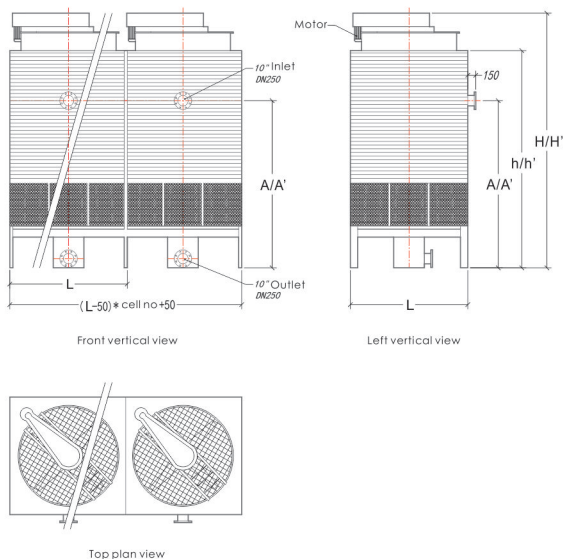
Model	Nominal flow rate		Dimension * ①			Size * ②			Motor Kw	Fan ④mm	Weight * ③		Weight * ④	
	28℃	27℃	L	h	H	A	h'	H'			Dry weight	Wet weight	Dry weight	Wet weight
YHD-1010LX	160	184	3135	3840	4460	2950	4140	4760	5.5	2200	1710	4902	2402	5200
YHD-1010PX	177	203							7.5		2290	5590	2550	5350
YHD-1010QX	200	229							11		2400	5200	2700	5500
YHD-1010RX	221	254							15		2550	5350	2850	5650
YHD-1010LY	175	201							5.5		2400	5200	2700	5500
YHD-1010PY	194	223							7.5		2550	5350	2850	5650
YHD-1010QY	219	251							11		2700	5500	3000	5800
YHD-1010RY	242	278							15		2850	5650	3150	5950
YHD-1010LZ	182	209							5.5		2700	5500	3000	5800
YHD-1010PZ	202	232							7.5		2850	5650	3150	5950
YHD-1010QZ	228	262	3745	4440	5060	3540	4740	5340	11	2500	3000	5800	3300	6100
YHD-1010RZ	252	289							15		3150	5950	3450	6250
YHD-1210LX	180	207							5.5		2400	5200	2700	5500
YHD-1210PX	200	229							7.5		2750	5850	3050	6150
YHD-1210QX	226	259							11		2900	6000	3200	6300
YHD-1210RX	250	287							15		3050	6150	3350	6450
YHD-1210LY	197	226							5.5		2950	6050	3250	6350
YHD-1210PY	219	251							7.5		3100	6200	3400	6500
YHD-1210QY	247	283							11		3250	6350	3550	6650
YHD-1210RY	273	313							15		3400	6500	3700	6800
YHD-1210LZ	205	235	4440	5060	5660	3540	4740	5340	5.5		3300	6400	3600	6700
YHD-1210QZ	228	264							7.5		3450	6550	3750	6850
YHD-1210RZ	257	295							11		3600	6700	3900	7000
YHD-1210RZ	284	326							15		3750	6850	4050	7150

#### ★ Note:

- The data column is just for preliminary selection design. Please ask the sales executive for the latest drawings
- Nominal flow rate 28° C is the maximum flow value on the condition that inlet temperature 37° C, outlet temperature 32° C at wet bulb temperature 28° C, unit: m³/h;
- Nominal flow rate 27° C is the maximum flow value on the condition that inlet temperature 37° C, outlet temperature 32° C at wet bulb temperature 28° C, unit: m³/h;
- Size \* is the corresponding size of single cell or 2cells assembly( when combination code is 1), unit: mm;
- Size \* is the corresponding size of 3cells or more assembly( when combination code is 3), unit: mm;
- Weight \* is the corresponding weight of single cell or 2cells assembly( when combination code is 1), unit: Kg;
- Weight \* is the corresponding weight of 3cells or more assembly( when combination code is 3), unit: Kg.

## Outline data

YHD-1212 1313



### ★ Note:

Sizes of inlet and outlet vary with actual flow, in order to make water velocity in pipe within the recommended value. Unnecessary larger diameter make the user's cost higher.  
Inlet and outlet are provided according to the standard GB/T 9119-9119 raised face and PN1.0 Mpa national standard flange connector, the matched sealing washer, companion flange, bolts are provided by the user  
If other connector required, please contact with sales executive for advice

The following data for a single cell:

Model	Nominal flow rate		L	Dimension * ①			Size * ②			Motor Kw	Fan ④mm	Weight * ③		Weight * ④	
	28 °C	27 °C		H	H	A	H'	H'	A'			Dry weight	Wet weight	Dry weight	Wet weight
YHD-1212LX	200	229	3745	3940	4540	3077	4240	4840	3377	5.5	2500	3010	7010	3310	7310
YHD-1212FX	221	254								7.5		3190	7190	3490	7490
YHD-1212QX	250	287								11		3370	7370	3670	7670
YHD-1212RX	277	318								15		3550	7550	3850	7850
YHD-1212VX	296	340								18.5		3730	7730	4030	8030
YHD-1212LY	219	251		4240	4840	3382	4540	5140	3682	5.5		3290	7290	3590	7690
YHD-1212PY	242	278								7.5		3570	7570	3870	7870
YHD-1212QY	274	314								11		3750	7750	4050	8050
YHD-1212RY	302	348								15		3930	7930	4230	8230
YHD-1212VY	324	372								18.5		4110	8110	4410	8410
YHD-1212LZ	238	262	4050	4540	5160	3687	4840	5460	3987	5.5		3770	7770	4070	8070
YHD-1212FZ	252	289								7.5		3950	7950	4250	8250
YHD-1212QZ	285	327								11		4130	8130	4430	8430
YHD-1212RZ	315	361								15		4310	8310	4610	8610
YHD-1212VZ	337	387								18.5		4490	8490	4790	8790
YHD-1313FX	240	275		3940	4540	3077	4440	5060	3577	7.5		3450	7950	3750	8250
YHD-1313QX	271	311								11		3640	8140	3940	8440
YHD-1313RX	300	344								15		3830	8330	4130	8630
YHD-1313VX	320	367								18.5		4020	8520	4320	8820
YHD-1313QY	338	388		4240	4840	3382	4740	5360	3882	22		4410	8910	4710	9210
YHD-1313PY	252	301								7.5		3840	8340	4140	8640
YHD-1313QY	296	340								11		4030	8530	4330	8830
YHD-1313RY	327	375								15		4220	8720	4520	9020
YHD-1313VY	350	402								18.5		4410	8910	4710	9210
YHD-1313QZ	370	425	4050	4540	5160	3687	5040	5660	4187	22		4800	9300	5100	9600
YHD-1313FZ	273	313								7.5		4230	8730	4530	9030
YHD-1313QZ	309	352								11		4420	8920	4720	9220
YHD-1313RZ	341	391								15		4610	9110	4910	9410
YHD-1313VZ	365	419								18.5		4800	9300	5100	9600
YHD-1313VZ	385	442								22		5190	9690	5490	9990

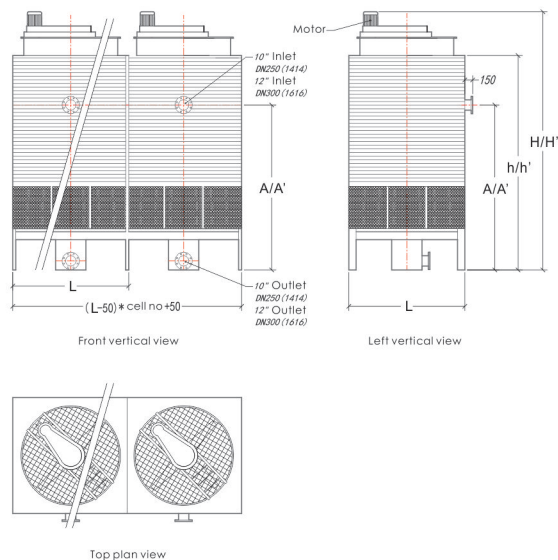
### ★ Note:

- The data column is just for preliminary selection design. Please ask the sales executive for the latest drawings
- Nominal flow rate 28° C is the maximum flow value on the condition that inlet temperature 37° C, outlet temperature 32° C at wet bulb temperature 28° C, unit: m³/h;
- Nominal flow rate 27° C is the maximum flow value on the condition that inlet temperature 37° C, outlet temperature 32° C at wet bulb temperature 28° C, unit: m³/h;
- Size \* is the corresponding size of single cell or 2cells assembly( when combination code is 1), unit: mm;
- Size \* is the corresponding size of 3cells or more assembly( when combination code is 3), unit: mm;
- Weight \* is the corresponding weight of single cell or 2cells assembly( when combination code is 1), unit: Kg;
- Weight \* is the corresponding weight of 3cells or more assembly( when combination code is 3), unit: Kg.



## Outline data

YHD-1414 1616



### ★ Note:

Sizes of inlet and outlet vary with actual flow, in order to make water velocity in pipe within the recommended value. Unnecessary larger diameter make the user's cost higher.  
Inlet and outlet are provided according to the standard G8/T 9119-9119 raised face and PN1.0 Mpa national standard flange connector, the matched sealing washer, companion flange, bolts are provided by the user  
If other connector required, please contact with sales executive for advice

The following data for a single cell:

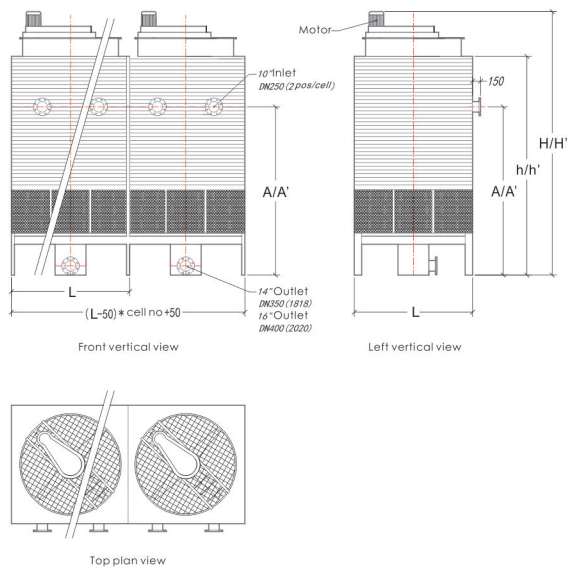
Model	Nominal flow rate 28 °C	Nominal flow rate 27 °C	L	Dimension * ①			Size * ②			Motor Kw	Fan ③mm	Weight * ③		Weight * ④	
				h	H	A	h'	H'	A'			Dry weight	Wet weight	Dry weight	Wet weight
YHD-1414FX	285	307	4355	4540	5570	3303	4640	5970	3703	7.5	2950	4210	9310	4510	9610
YHD-1414DX	323	371								11		4420	9520	4720	9820
YHD-1414EX	356	408								15		4630	9740	4940	10240
YHD-1414GX	382	438								18.5		4840	9990	5190	10590
YHD-1414CX	404	464								22		5050	10150	5350	10650
YHD-1414FY	311	357								7.5		4610	9710	4910	10010
YHD-1414FY	353	405								11		4820	9920	5120	10220
YHD-1414FY	389	446								15		5030	10130	5330	10430
YHD-1414FY	418	480								18.5		5240	10340	5540	10640
YHD-1414FY	442	507								22		5450	10550	5750	10850
YHD-1414GZ	325	373	4840	6170	3913	5240	6570	4313	7.5	3400	5010	10110	5310	10410	
YHD-1414GZ	370	425							11		5220	10320	5520	10620	
YHD-1414GZ	406	466							15		5430	10530	5730	10830	
YHD-1414GZ	435	499							18.5		5640	10740	5940	11040	
YHD-1414GZ	460	528							22		5850	10950	6150	11250	
YHD-1416GX	380	436							11		4950	11150	5250	11450	
YHD-1416GX	420	482							15		5210	11410	5510	11710	
YHD-1416GX	450	516							18.5		5470	11670	5770	11970	
YHD-1416GX	475	545							22		5730	11930	6030	12230	
YHD-1416GX	525	602							30		5990	12190	6290	12490	
YHD-1416GY	415	476	4965	4640	5970	3708	5040	6370	4108	11	3400	5360	11560	5660	11860
YHD-1416GY	460	528								15		5620	11820	5920	12120
YHD-1416GY	492	566								18.5		5880	12080	6180	12380
YHD-1416GY	530	597								22		6140	12340	6440	12640
YHD-1416GY	575	660								30		6400	12600	6700	12900
YHD-1416GZ	483	497								11		5770	11970	6070	12270
YHD-1416GZ	480	551								15		6030	12230	6330	12530
YHD-1416GZ	514	590								18.5		6290	12490	6590	12790
YHD-1416GZ	542	622								22		6550	12750	6850	13050
YHD-1416GZ	600	688								30		6810	13010	7110	13310

### ★ Note:

- The data column is just for preliminary selection design. Please ask the sales executive for the latest drawings
- Nominal flow rate 28° C is the maximum flow value on the condition that inlet temperature 37° C, outlet temperature 32° C at wet bulb temperature 28° C, unit: m³/hr;
- Nominal flow rate 27° C is the maximum flow value on the condition that inlet temperature 37° C, outlet temperature 32° C at wet bulb temperature 28° C, unit: m³/h;
- Size \* is the corresponding size of single cell or 2cells assembly( when combination code is 1), unit: mm;
- Size \* is the corresponding size of 3cells or more assembly( when combination code is 3), unit: mm;
- Weight \* is the corresponding weight of single cell or 2cells assembly( when combination code is 1), unit: Kg;
- Weight \* is the corresponding weight of 3cells or more assembly( when combination code is 3), unit: Kg.

## Outline data

### YHD-1818 2020



#### ★ Note:

Size of inlet and outlet vary with actual flow, in order to make water velocity in pipe within the recommended value. Unnecessary larger diameter make the user's cost higher.  
Inlet and outlet are provided according to the standard GB/T 9119-9119 raised face and PN1.0 Mpa national standard flange connector, the matched sealing washer, companion flange, bolts are provided by the user  
If other connector required, please contact with sales executive for advice

The following data for a single cell:

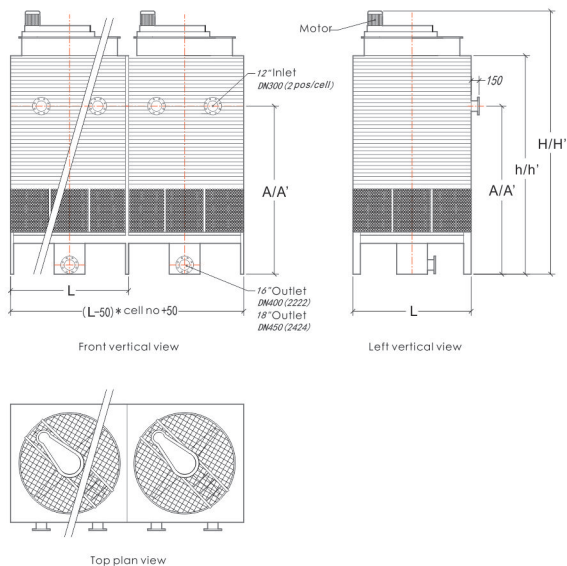
Model	Nominal flow rate 28 °C	Nominal flow rate 27 °C	L	Dimension * ①			Size * ②			Motor Kw	Fan mm	Weight * ③		Weight * ④	
				h	H	A	h'	H'	A'			Dry weight	Wet weight	Dry weight	Wet weight
YHD-1818K	510	585	5575	4440	5770	3477	4840	6170	3877	15	3600	5800	13600	6100	13900
YHD-1818KX	545	625								18.5		6110	13910	6410	14210
YHD-1818KX	575	660								22		6420	14220	6720	14520
YHD-1818KX	605	720								30		6730	14530	7030	14830
YHD-1818KX	660	780								37		7040	14840	7340	15140
YHD-1818KX	558	640								15		6200	14000	6500	14300
YHD-1818KX	597	685								18.5		6510	14310	6810	14610
YHD-1818KX	630	723								22		6820	14620	7120	14920
YHD-1818KX	695	797								30		7130	14930	7430	15230
YHD-1818KX	745	855								37		7440	15240	7740	15540
YHD-1818K2	582	668	6185	4740	6070	3782	5140	6470	4182	15	4200	6000	14400	6900	14700
YHD-1818K2	622	714								18.5		6910	14710	7210	15010
YHD-1818K2	667	754								22		7220	15020	7520	15320
YHD-1818K2	725	832								30		7530	15330	7830	15630
YHD-1818K2	777	892								37		7840	15640	8140	15940
YHD-2020K	670	769								22		7350	17150	7650	17450
YHD-2020KX	740	849								30		7660	17460	7960	17760
YHD-2020KX	792	929								37		8010	17810	8310	18110
YHD-2020KX	840	954								45		8340	18140	8640	18440
YHD-2020KX	733	841								22		7760	17560	8060	17860
YHD-2020KX	810	929	6185	4940	6720	3882	5340	7120	4282	30	4200	8090	17890	8390	18190
YHD-2020KX	847	995								37		8420	18220	8720	18520
YHD-2020KX	920	1056								45		8750	18550	9050	18850
YHD-2020K2	764	877								22		8170	17970	8470	18270
YHD-2020K2	845	970								30		8500	18300	8800	18600
YHD-2020K2	905	1038								37		8830	18630	9130	18930
YHD-2020K2	960	1107								45		9160	18960	9460	19260

#### ★ Note:

- The data column is just for preliminary selection design. Please ask the sales executive for the latest drawings
- Nominal flow rate 28 ° C is the maximum flow value on the condition that inlet temperature 37 ° C, outlet temperature 32 ° C at wet bulb temperature 28 ° C, unit: m<sup>3</sup>/hr;
- Nominal flow rate 27 ° C is the maximum flow value on the condition that inlet temperature 37 ° C, outlet temperature 32 ° C at wet bulb temperature 28 ° C, unit: m<sup>3</sup>/h;
- Size \* is the corresponding size of single cell or 2cells assembly( when combination code is 1), unit: mm;
- Size \* is the corresponding size of 3cells or more assembly( when combination code is 3), unit: mm;
- Weight \* is the corresponding weight of single cell or 2cells assembly( when combination code is 1), unit: Kg;
- Weight \* is the corresponding weight of 3cells or more assembly( when combination code is 3), unit: Kg.

## »»» Outline data

### YHD-2222 2424



#### ★ Note:

Sizes of inlet and outlet vary with actual flow, in order to make water velocity in pipe within the recommended value. Unnecessary larger diameter make the user's cost higher.  
Inlet and outlet are provided according to the standard GB/T 9119-9119 raised face and PN1.0 Mpa national standard flange connector, the matched sealing washer, companion flange, bolts are provided by the user  
If other connector required, please contact with sales executive for advice

The following data for a single cell:

Model	Nominal flow rate	Nominal flow rate	L	Dimension * ①			Size * ②			Motor Kw	Fan ③-4mm	Weight * ③		Weight * ④	
				H	H'	A	H'	H'	A'			Dry weight	Wet weight	Dry weight	Wet weight
YHD-2222X	760	872	6795	4740	6520	3703	5140	6920	4103	22	4200	8500	19900	8800	20200
YHD-2222X	840	964								30		8990	19990	8890	20290
YHD-2222X	900	1033								37		8680	20080	8900	20380
YHD-2222X	955	1088								45		8780	20180	9000	20480
YHD-2222X	1000	1120								55		8880	20280	9100	20580
YHD-2222X	1022	1160								60		8700	20100	9000	20400
YHD-2222X	1020	1055								30		8790	20190	9000	20490
YHD-2222X	985	1130								37		8880	20280	9100	20580
YHD-2222X	1045	1199								45		8980	20380	9200	20680
YHD-2222X	1116	1280								55		9080	20480	9300	20780
YHD-2222X	865	992	7405	5340	7120	4313	5740	7520	4713	22	4700	8900	20300	9200	20600
YHD-2222X	958	1099								30		8990	20390	9200	20690
YHD-2222X	1025	1176								37		9080	20480	9300	20780
YHD-2222X	1088	1248								45		9180	20580	9400	20880
YHD-2222X	1162	1333								55		9280	20680	9500	20980
YHD-2424X	930	1067								30		9670	22070	9770	22170
YHD-2424X	995	1142								37		9000	22400	9300	22700
YHD-2424X	1060	1216								45		9330	22730	9630	23030
YHD-2424X	1130	1297								55		9660	23060	9960	23360
YHD-2424X	1018	1168								30		9118	22310	9418	22810
YHD-2424X	1090	1251	7405	5140	6920	4108	5540	7320	4508	37	4700	9440	22840	9740	23140
YHD-2424X	1160	1331								45		9770	23170	10070	23470
YHD-2424X	1235	1417								55		10100	23500	10400	23800
YHD-2424X	1090	1216								30		9550	22950	9850	23250
YHD-2424X	1135	1302								37		9880	23280	10180	23580
YHD-2424X	1208	1388								45		10210	23610	10510	23910
YHD-2424X	1285	1478								55		10540	23940	10840	24240

#### ★ Note:

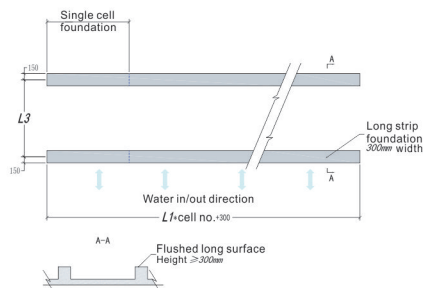
- The data column is just for preliminary selection design. Please ask the sales executive for the latest drawings
- Nominal flow rate 28° C is the maximum flow value on the condition that inlet temperature 37° C, outlet temperature 32° C at wet bulb temperature 28° C, unit: m<sup>3</sup>/hr;
- Nominal flow rate 27° C is the maximum flow value on the condition that inlet temperature 37° C, outlet temperature 32° C at wet bulb temperature 28° C, unit: m<sup>3</sup>/hr;
- Size \* is the corresponding size of single cell or 2cells assembly( when combination code is 1), unit: mm;
- Size \* is the corresponding size of 3cells or more assembly( when combination code is 3), unit: mm;
- Weight \* is the corresponding weight of single cell or 2cells assembly( when combination code is 1), unit: Kg;
- Weight \* is the corresponding weight of 3cells or more assembly( when combination code is 3), unit: Kg.





## Foundation Data

YHD-0303 0404 0505

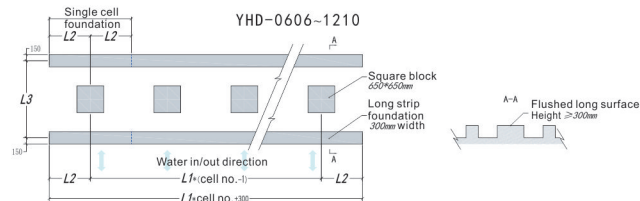


YHD	L1 (mm)	L2 (mm)	L3 (mm)
0303	950	—	950
0404	1255	—	1255
0505	1560	—	1560

**\* Note:**

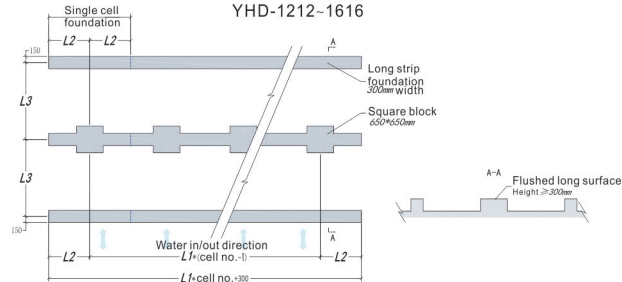
1. The data in columns are just for your preliminary layout. Please ask your sales executive for the latest drawings.
2. The buyer is responsible for concrete foundation, to ensure the basic plane at the same level; cement paste surface wiped uniform flat and level.
3. The bearing load of foundation varies with the lower model, this is the key data, please ask your sales executive for the foundation load diagram of the corresponding tower type.
4. Please note that position of inlet and outlet indicated in the foundation drawing, reasonable placement can greatly save with steel tubes and workload.
5. If your concrete foundation has been existing, please check the size can be applicable directly. If not, please contact your sales executive for further communication and determination of the size and appropriate steel frame foundation drawings.

YHD-0606~1210



YHD	L1	L2	L3
0606	1865	1082.5	1865
0806	2475	1387.5	1865
0808	2475	1387.5	2475
1008	3085	1692.5	2475
1010	3085	1692.5	3085
1210	3695	1997.5	3085

YHD-1212~1616

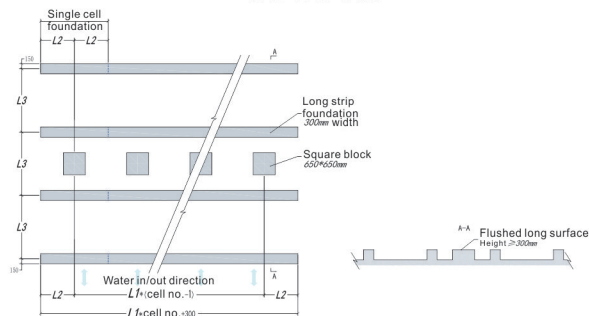


YHD	L1	L2	L3
1212	3695	1997.5	1847.5
1313	4000	2150	2000
1414	4305	2302.5	2152.5
1616	4915	2607.5	2457.5



## Foundation Data

YHD-1818-2424



YHD	L1	L2	L3
1818	5525	2912.5	1841.7
2020	6135	3217.5	2045
2222	6745	3522.5	2248.3
2424	7355	3827.5	2451.7

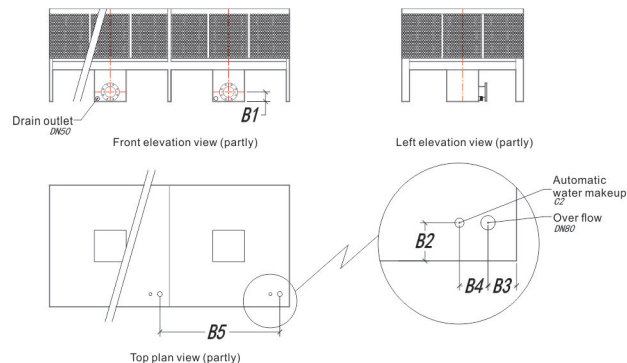
### ★ Note:

1. The data in columns are just for your preliminary layout. Please ask your sales executive for the latest drawings.
2. The buyer is responsible for concrete foundation, to ensure the basic plane at the same level; cement paste surface wiped uniform flat and level.
3. The bearing load of foundation varies with the tower model, this is the key data, please ask your sales executive for the foundation load diagram of the corresponding tower type.
4. Please note that position of inlet and outlet indicated in the foundation drawing, reasonable placement can greatly save with steel tubes and workload.
5. If your concrete foundation has been existing, please check the size can be applicable directly. If not, please contact your sales executive for further communication and determination of the size and appropriate steel frame foundation drawings.



## Piping date

YHD-0303 0404 0505



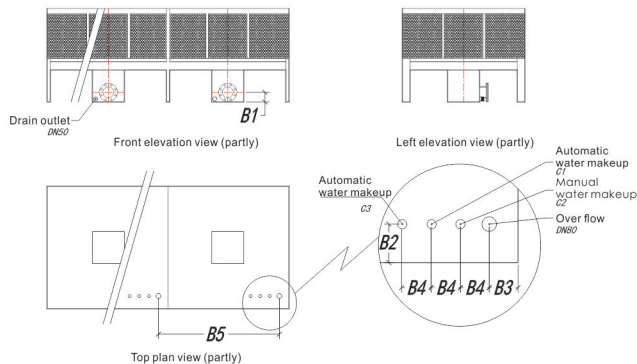
YHD	C1(mm)	C2(mm)	C3(mm)	B1(mm)	B2(mm)	B3(mm)	B4(mm)	B5(mm)	Lift
0303	-	DN20	-	110	400	400	200	950	4.5m
0404	-	DN20	-	130	400	400	200	1255	4.6m
0505	-	DN20	-	130	400	400	200	1560	4.7m

### ★ Note

The location of inlet is figured in the outline drawing, meanwhile the size in design drawing is only for your preliminary reference, if you need exact position size, please contact your sales executive for more detailed drawings.

## »»» Piping date

YHD-0606~2424



YHD	C1	C2	C3	B1	B2	B3	B4	B5	Lift
0606	DN20	DN20	-	150	400	400	200	1865	6.5m
0806	DN20	DN20	-	150	400	400	200	2475	6.5m
0808	DN20	DN20	-	180	400	400	200	2475	6.8m
1008	DN25	DN25	-	180	400	400	200	3085	6.8m
1010	DN25	DN25	-	180	400	400	200	3085	6.9m
1210	DN25	DN25	-	180	400	400	200	3695	6.9m
1212	DN25	DN25	-	210	400	400	200	3695	7.0m
1313	DN40	DN40	-	210	400	400	200	4000	7.2m
1414	DN40	DN40	-	210	400	400	200	4305	7.3m
1616	DN50	DN50	-	230	400	400	200	4915	7.4m
1818	DN50	DN50	-	260	400	400	200	5525	7.5m
2020	DN50	DN50	DN50	290	400	400	200	6135	7.6m
2222	DN50	DN50	DN50	290	400	400	200	6745	7.7m
2424	DN50	DN50	DN50	320	400	400	200	7355	7.8m

### ★ Note

The location of inlet is figured in the outline drawing, meanwhile the size in design drawing is only for your preliminary reference, if you need exact position size, please contact your sales executive for more detailed drawings.

## »»» Optional accessories



To provide services in a comprehensive way, Yuanheng prepare a variety of "optional accessories" for customers to choose, ensure that products meet the design requirements on the operation and customers' expectations. All options must be made notes when ordering.

### 1. Safety devices

#### ► Tower top rail

As transmission part is located at the top of cooling tower, it's necessary to regularly fill the reducer with grease and examine the firmness of the belt according to the maintenance requirements. When great importance attached to safety, choose to add rail at the top of the tower to fully ensure the safety of maintenance personnel.

#### ► Ladder's safety cage

In order to prevent any accident when climbing the ladder, it is recommended that you add safety cage to the ladder ensure the safety of maintenance personnel with the greatest possible.

#### ► Ladder extension

Generally speaking, foundation at the bottom of cooling tower must be 300mm high or higher, but the highest point of inlet and outlet main pipes must be lower than the highest point of collection basin sump, the actual foundation is heightened sharply according to the size of the main pipe and pipeline configuration. Since actual foundation height is not in the control of cooling tower manufacturer, so customer should make request in accordance with the actual foundation of cooling tower, we will extend the ladder accordingly, it's convenient to climb up and down the tower.

#### ► Observation window

In order to observe nozzles and fills surface at cooling tower runtime, or nozzle fallen off, or dirty stuff stayed on the fills surface, so we recommend that you add the observation window, it's not only convenient for maintenance, but also ensure the safety of the maintenance staff.

#### ► Lightning protection device

Cooling tower body is high, if install anywhere in lightning areas or on the roof of less lightning area, it's necessary to install lightning protection device and reliable grounding. In thunder and lightning days, it can effectively avoid the lightning damages to cooling tower components as well as other devices connected to the cooling tower.

#### ► Vibration switch

The function of vibration switch is to monitor vibration value of the transmission part, when the vibration more than the set value, it cut off the motor's power sensitively. So as to avoid unexpected breakdown to the reducer or damage on fan from falling objects, it can quickly cut off power supply, avoid motor running, and reduce the possible harm and loss. Although such extreme situation seldom happens, but if such situation is likely to happen on cooling tower especially falling objects from high altitude or no barrier surrounding cooling tower surroundings, or for the sake of higher safety, we recommend that you consider vibration switch. When you make a decision, please contact your sales executive for further understanding.



## Optional accessories

### 2. Noise reduction device

Noise from count-flow cooling tower is mainly divided into two parts, one is high frequency splashing from water dripping from the lower part of packing fills into cold water collection basin, and the other is the noise of low frequency disturbance produced by fan rotation. There is a variety of noise reduction method for different noise resources. Please contact the sales executive for the detailed noise at some point, and details of the noise analysis diagram.

#### ➤ Muffled blanket

Although the intake grille holds back part of noise, reduces the noise by 3-5 db (A) at standard measuring point, but still cannot meet your requirements. If putting one thick and light blanket at the bottom, it works as a buffer layer on the water. According to different thickness and material, the noise value will be reduced by 3-6 db (A).

#### ➤ Air inlet sound-absorbing device

For higher request on noise, it is recommended to add sound-absorbing device. The device is mounted out of the tower, form an intake channel composed of sound-absorbing cotton, absorb the turbulence of the air intake noise. Adding this device make the tower selection larger, and because it increases resistance and decreases heat capacity of the cooling tower. Please contact the sales executive when you make decision for this device and for a detailed analysis.

#### ➤ Heightened fan cylinder at air outlet

Noise at outlet comes mainly from fan rotation, surging produced by high speed disturbance airflow at the end of the fan blade. Because fan speed is low, this noise belongs to low frequency one, transmission distance of the noise in the air is long, so the impact is bigger impact. When heightened fan cylinder at air outlet, it will significantly improve air velocity at end of the fan, makes the airflow more uniform in the heightened fan cylinder area, avoids local surging due to too fast wind speed. This is helpful to eliminate noise from parallel position or higher cooling tower location point, by about 4 ~ 5 db (A).

#### ➤ Discharge hood at outlet

When a certain direction of the cooling tower is close with residential building or an area sensitive to noise, then adding discharge hood change the direction of propagation of the noise toward the direction insensitive to noise, reduce noise values backwards, generally reduce by 5-7 db (A). If heightened fan cylinder and discharge hood work together, noise at the back side will reduce about 10 db (A).

#### ➤ Frequency conversion motor or more speed

The effect of frequency conversion motor, multi-speed motors makes the fan speed adjustable, its role is to reduce the fan speed to achieve energy saving effect when heat load is low. Meanwhile, the temperature drops at night, or for low heat load cases, the reduction of fan rotation speed can reduce noise of cooling tower at the same time.

#### ➤ Vibration isolator

Rubber and spring vibration isolators are available for options. According to our design of low speed, rubber vibration isolator is recommended to meet the requirements of vibration isolation. For using spring vibration isolator, extra steel structure frame is required; inlet and outlet should be connected with soft coupling.

#### ➤ Ultra-quiet fan

If you have high request for fan noise level, we will provide the ultra-quiet fan accessories, it can be more than 15 db (A) lower than the average fan. The parts need to eliminate water splashing noise device equipped at the same time, can play a better role. To meet the requirements of higher noise, in the case of cost allows, you can choose "Howden or Cofimco" silent dedicated fan, make the outlet noise below 60 db.

## Optional accessories



### 3. Anti-freezing device

If the cooling tower runs at the temperature below 5 °C, antifreeze freezing prevention measures should be considered. Even if the cooling tower is not running under the temperature, rest water in the cooling tower should be cleaned off, and the drain valve is normally open, in case of freezing damage due to snow and rain collected in basins.

Icing and freezing of running counter-flow cooling tower, there are three main parts: first splash freezing, water droplets splashed from air inlet and outlet fall to the grid or tower top ice under the influence of cold air; Second is leak freezing, water from the seams of poor sealing panel, baffle, or collection basin ice in cold air, the third is icing of low flow rate, low flow makes water distribution not uniform, causes less hot water in part of packing area, under the cold air influence, icing and freezing in packing area.

#### ➤ Electric heater

Generally electric heater installed in the central sump at the bottom, in a short outage, turn on electric heater in case freezing in the center sump. Commonly use with liquid level switch. Power size of electric heater relates with the value of outdoor air and the size of the center sump. Please communicate with your sales executive for suitable electric heater.

#### ➤ Preheating device at air intake

When air temperature is extremely low, as lower than -15 °C, preheating device is added at air intake to pre-heat intake air to 3 °C above, to prevent freezing. The device is bypass device of water inlet; hot water can be introduced into the device partly or totally, preheat the intake air then hot water cooled. Involving changes in cooling principle and thermal performance, the device must be taken into consideration in the selection. For detailed information, please contact your sales executive.

#### ➤ Three-dimensional three-fold drift eliminator

When the temperature below 5 °C, drift at the outlet will form a frozen area around, when there is natural wind, it will form a frozen area with greater distances. In order to obtain a very low (less than) 0.0001% of drift loss, choose this accessory to reduce the risk of icing.

### 4. Other devices

#### ➤ Partition in cold water collection basin

When two or more cells of cooling towers sharing one cold collection basin, during downtime for cleaning, the cooling tower has to be stopped running and drained of all the water. If not all the cells are allowed to halt at the same time, such accessory is a good option. The partition has a water gate easy to open, at run time, open the water gate to achieve water level balance in basin; for maintenance, shut off the water gate then do the maintenance.

#### ➤ Gear transmission

Gear transmission's efficiency is high, gear can run in a bad environment, so is used in chemical industry and electric power mainly etc. Although it has higher noise than belt drive, but in order to guarantee operation reliability under the bad environment, gear drive is good choice.

#### ➤ No pump cooling tower

When there is equipped with a large cement pool as storage device of pipe water, then we can consider placing the cooling tower on the pool, no sump for the cooling tower design, so water directly drops into the pool. In this way, height of cooling tower can not only be less, not also cost of cooling tower reduced by removing sump and saving pipelines, especially in multiple cells combination.

#### ➤ Control cabinet

We can provide control cabinet to match our cooling tower, in response to the design request of cooling system.

## »»» Design / Installation / Maintenance Notes

### » Notes to selection

1. International standard design working condition: water inlet temperature 37° C, water outlet temperature 32° C, wet-bulb temperature 28° C, dry-bulb temperature 31.5° C, atmospheric pressure 9.9104 Pa.
2. The company can provide special selection and design under non-standard working conditions.
3. Due to layout limit or on-site requirement, the company can provide specific design and manufacture according to clients' demand.
4. Flow rate of 200~1000m<sup>3</sup>/hr tower can choose single fan or multi-fans subject to the actual need.
5. The support foundation must be in the same level and all the tolerances must be less than 5mm.
6. The foundation height h2 is depended on diameter of water outlet main-pipe and its installation height.
7. When different models are connected at site, the water levels (Size D) of bottom basins of different models should be considered and heights of foundations are adjusted to keep the water level balanced.
8. The picture shows the connection position and size of single cell, which is applicable for multi-cells assembly.
9. The diameter of water outlet flange can be enlarged if required.
10. When cooling towers are installed in noise-sensitive areas (such as residential, hotel, hospital, office building), be sure to consider the effects of noise and request the company to provide technical solution.
11. The minimum distance between air intake surface of cooling tower and the building relates to the tower type and associated cells numbers, the company can provide detailed information upon request.
12. Circulating cooling water should be free of oils and substances which will clog PVC filter, cooling water turbidity should not be larger than 50mg/L, cooling water (25°C) pH value between 6-8, total hardness (CaCO<sub>3</sub>) < 200ppm, chloride ion concentration (CL) < 200 PPM, iron ion concentration (Fe) < 1.0 PPM, accord with GB50050-2007 design and treatment design specification requirements of industrial circulating cooling water. If cooling water doesn't meet the above requirements, please inform us, we will provide a solution.



### » Running and maintenance:

1. In order to keep smooth water flow, please clean residues in water distribution system and filter regularly.
2. Assuming running 12 hours a day, inspect reducer bearings once every month and lubricate oil if necessary.
3. Over-tightened belts lead damages to bearings, while too loose belts will skid and then lower the durability. After 7~10 days running, new belts should be adjusted to keep suitable tightness.
4. In order not to bear unnecessary tension, release the belts when cooling tower in long period of shutdown.
5. Drain down and clean water basin during cold winter to avoid freezing.
6. Pay attention to water level in bottom basin and check running components.
7. During shutdown period, run the motor one hour every month at least to avoid water ponded in the coil.

### » Notes to Installation:

1. Installed in a well-ventilated and clean place.
2. Exhaust air can be reabsorbed by circulation.
3. A distance between air intake and the building to make sure ambient air enters to the tower.
4. Installed in open places, so as to avoid the noise amplification of sound reflection.
5. Avoid use in the area close to dusty and acid gas, or otherwise lead damages to components and pipes.
6. Keep away from smokestack and heat source.
7. Lay horizontally; do not lean, to avoid affection to cooling effect due to uneven water distribution.
8. Do not use gas cutting, electric welding on the top of FRP tower.
9. Fan passes through balance test and keeps the consistency of blades and hubs when installation.
10. Seal wiring holes after the motor is wiring.

### » Around the clients and provide satisfactory services

The company not only continuously exceeds clients' expectations, it also perfect every step of design, production, logistics and after-sales services. It is the honor to provide convenient, reliable and professional service to our clients.

From the moment the clients choose Yuanheng, the service center liaise regularly with the clients, keep records of product usage, and collect clients' feedback to provide data and technical support for after-sales service, tracking service always runs through the whole product life cycle. With good professionalism and high sense of responsibility, Yuanheng engineers response to clients' demand rapidly and provide the most efficient and professional solutions.

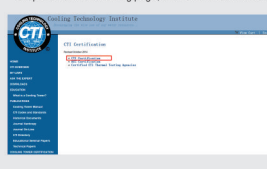
## »»» Information consistency – open and transparent

How to check whether the products you buy achieved CTI certification

### Step 1 Enter www.cti.org click cooling tower certification



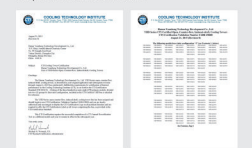
### Step 2 enter the following page, click on the red line box



### Step 3 enter the following page, click on the red line box



### Step 4 View CTI Certification



### Step 5 Click on the above information, enter our website (www.yhjk.com)



### Step 6 View sample technical data



Through above steps, from the CTI website, company website, product samples, CTI certification, if information can be consistent, such as: product model, the cooling water flow, fan diameter, motor power, dimensions, The product you choose has achieved CTI certification.