

LHC COOLING TOWER

Heavy Duty Cross Flow Type



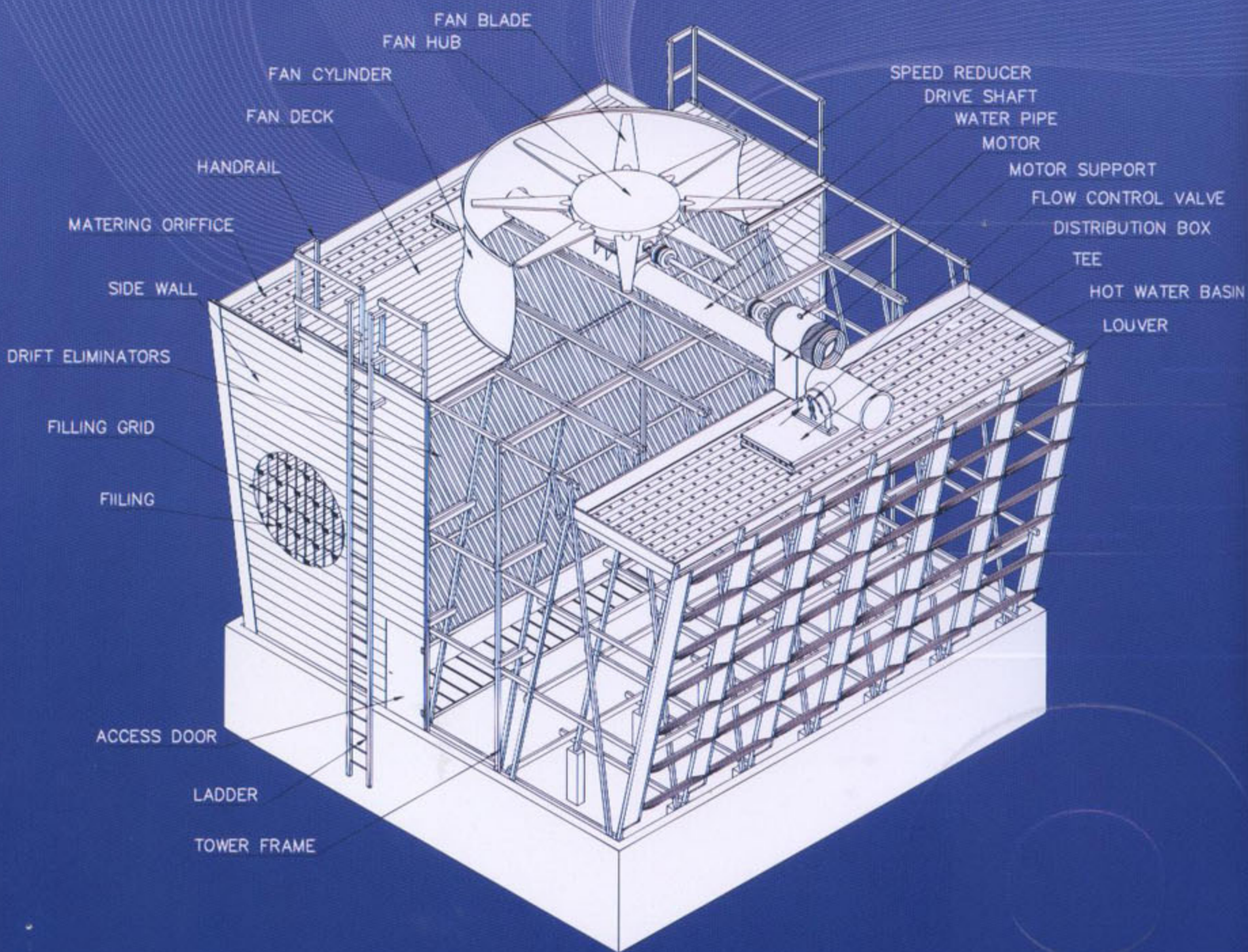
LHC



PT. LIANG CHI INDONESIA



CONSTRUCTION



INTRODUCTION

In order to meet today's demand for environmental control, industry has shown a growing interest in water reclamation. This is particularly so in the petroleum, petro-chemical and steel mills when the tremendous amount of water is consumptively utilized in the system.

Liang Chi has started research and development of equipment in this field since 1972. Working in close cooperation with foreign leading manufacturers, Liang Chi developed a range of model LHC cooling tower, It is mechanically designed with crossflow induced draft type, specifically suited for industrial process system.

As the result of extensive experience gained in actual use over many years, Liang Chi cooling tower model LHC is recognized as products meeting the ultimately requirement of today's technology.



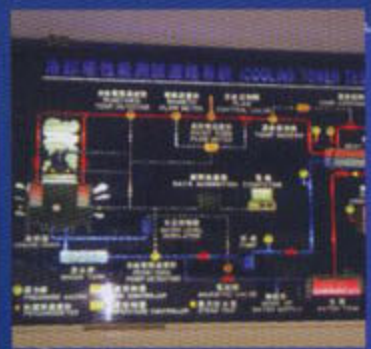
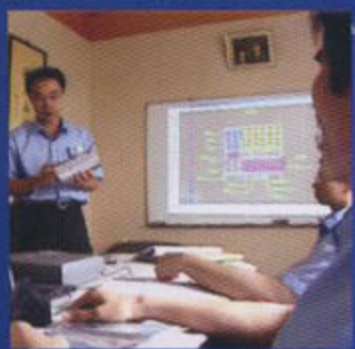
COOLING TOWER APPLICATION ASSISTANCE

How Liang Chi give an immediate Cooling tower assistance to meet Your requirement ground the world.

With more than 30 year in manufacture of cooling towers, Liang Chi can give you Access to a rage of best reliability and easiest maintenance for air-conditioning and Industrial process.

Selecting the right cooling tower Applications for your plant can be a puzzle, but Liang Chi's engineers assist you in making the solution. As a result, this assistance Will produce optimum performance and economy for our customers around the world.

With all the benefits of field-erection experience and knowledge for special cooling tower Applications, our high-trainer team of engineers are ready to meet you future need Efficiently, economically.





PURCHASER'S SPECIFICATIONS

Purchaser's specifications must clearly outline all conditions which are applicable to the Installation so that economical cooling tower selection can be made based on a total cost Evaluation including not only capital investment but also operating costs. Items which Should be given consideration for inclusion In specifications are listed below.

DESIGN CONDITIONS

1. Total heat Load: Kcal/Hr
2. Circulating Water Flow: M³ /Hr
3. Pumping Head Required: M
4. Water Inlet Temp.: 0C
5. Water Outlet Temp.: 0C
6. Ambient Wet Bulb Temp.: 0C
7. Average Wind Velocity and Direction
8. Available Installation Area
9. Electrical Voltage and Frequency
10. Conditions of Area Surrounding Installation Site.

MATERIALS TO BE USED

1. Mechanical Equipment Material Including Fan, Reducer & Drive Shaft
2. Materials of Framework and Casing
3. Materials and Treatment of Structure Connectors
4. Materials and Treatment of Piping System

OTHER ITEMS

1. Purpose of Tower Usages
2. Location of Piping
3. Capacity of Cold Water Basin
4. Quality of Circulation Water
5. Time of Delivery

LHC COOLING TOWER ADVANTAGES AND FEATURES

1. HIGHEST PERFORMANCE

Provide with more wetted surface for uniform water distribution and higher heat transfer efficiency. The filling and drift eliminator allow the maximum air volume through the cooling tower.

2. LOWEST MAINTENANCE

Construct With durable materials for cooling tower like preservative treated wood, fiberglass reinforced polyester and asbestos cement boards. The steel is hot dip galvanized after fabrication to be anti-corrosive.

3. ECONOMICAL OPERATION

Optimize with special axial fans, speed reducer and drift eliminator etc. It is maximized the cooling performance at lower energy.

4. NOISE LEVEL

Design with large fans at low speed operation to minimize noise pollution. The ventri fan cylinder will be added on larger cooling tower for low noise level.





GENERAL DESCRIPTION

MECHANICAL EQUIPMENT

All mechanical equipment for our Cross-Flow Type Cooling Tower is especially designed and manufactured By ourselves for cooling tower application. For example, The Fans are made of cast aluminum alloy for smooth quiet operation. Adjustable pitch blades can be freely adjusted to attain a maximum of air discharging efficiency according to requirements of air volume. Belt Reducer, of Gear Reducer(Licensed by Nippon Gear Co., Ltd, Japan), are proven our design with an overall efficiency of 95%. There is no public nuisance problem from our Cross-Flow Type Cooling Tower

FAN CYLINDER

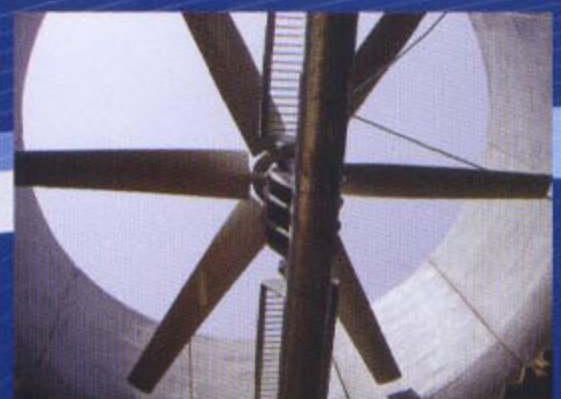
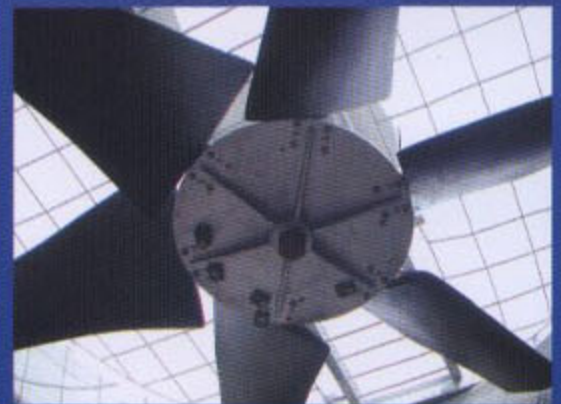
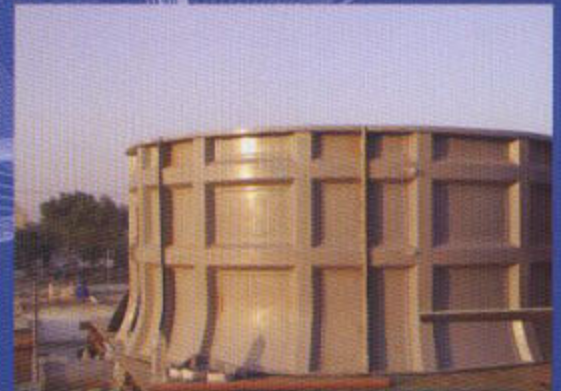
Fiberglass Reinforced polyester fan cylinders Employ "Aero Dynamic Contour" design. This Design allows close to larence on fan blade tip Clearance plus less interference of air passing Through the tower.

FILLING & GRID

The timber splash bars are preservative - treated, Supported on close centers by non-corrosive FRP (Fiberglass Reinforced Polyester) grids. The FRP Grids holds the filling in position permanently to assure uniform water distribution throughout the life of the tower, reducing draft loss to a minimum and result to maximum cooling efficiency.

NOZZLE

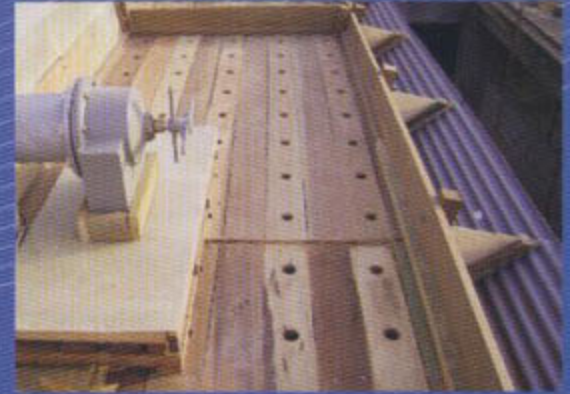
The "Liang Chi Nozzle" metering orifices used in The hot water basin of our Cross-Flow Type Cooling Tower Model LHC are specially designed to deliver required water distribution and are highly resistant to Temperature and weathering damage. The use of these "Liang Chi Nozzle" also eliminates the need For a separate diffusion deck to provide complete Water distribution throughout the filling area.



GENERAL DESCRIPTION

DISTRIBUTION VALVE

The distribution valve used in our Cross-flow Type Cooling Tower Model LHC is made of cast iron valve body and brass control disk, It keep the water flow smoothly without Interruption and being easily adjusted for long life and low maintenance.

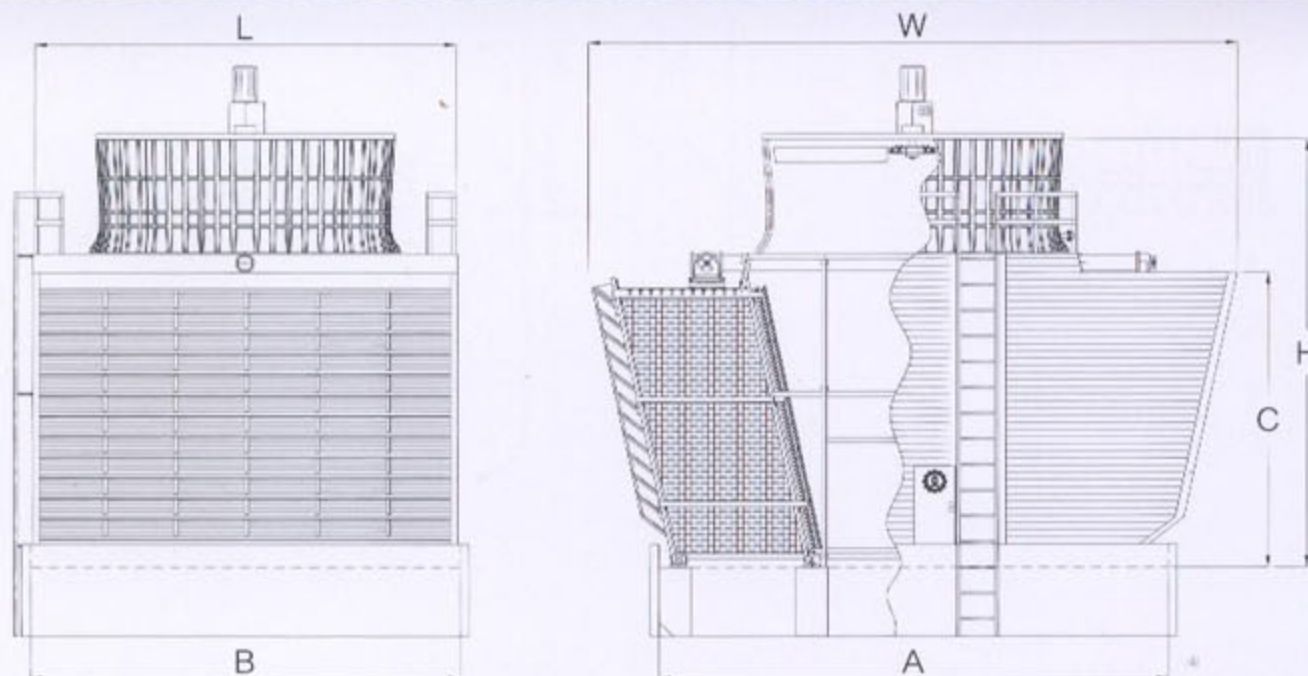


SPECIFICATIONS	STANDARD	OPTION
FAN MOTOR	IP 55, CLASS F, 380V /3PH / 50HZ.	IP 56, IP 65, HI-EFFICIENCY MOTOR
REDUCER	BELT / GEAR REDUCER	-
FAN BLADE	AL. ALLOY	F.R.P. / COATING
FRAMEWORK	TRATED WOOD	F.R.P. / CONCRETE / H.D.G.S.
FAN CYLINDER	FIBER GLASS REINFORCED POLYESTER (F.R.P.)	-
FAN DECK	TRATED WOOD	F.R.P. / CONCRETE / H.D.G.S.
CASING (SIDE PLATE)	FIBER GLASS REINFORCED POLYESTER (F.R.P.)	CONCRETE (FOR CONCRETE FRAMEWORK)
FILLING	TRATED WOOD / P.V.C.	P.P. / C.P.V.C / SPLASH TYPE
FILLING GRID	FIBER GLASS REINFORCED POLYESTER (F.R.P.)	SUS 304
HOT WATER BASIN	TRATED WOOD	-
DRIFT ELIMINATOR	P.V.C. / TRATED WOOD	-
INLET LOUVER	FIBER GLASS REINFORCED POLYESTER (F.R.P.)	-
LADDER AND HANDRAIL	WOOD / H.D.G.S.	-
FLOW CONTROL VALVE	CAST IRON VALVE	-
METERING ORIFFICE	POLYPROPYLENE	-
STRUCTURE CONNECTORS	H.D.G.S.	SUS 304
BASIN	CONCRETE (TO BE FURNISHED BY BUYER)	-





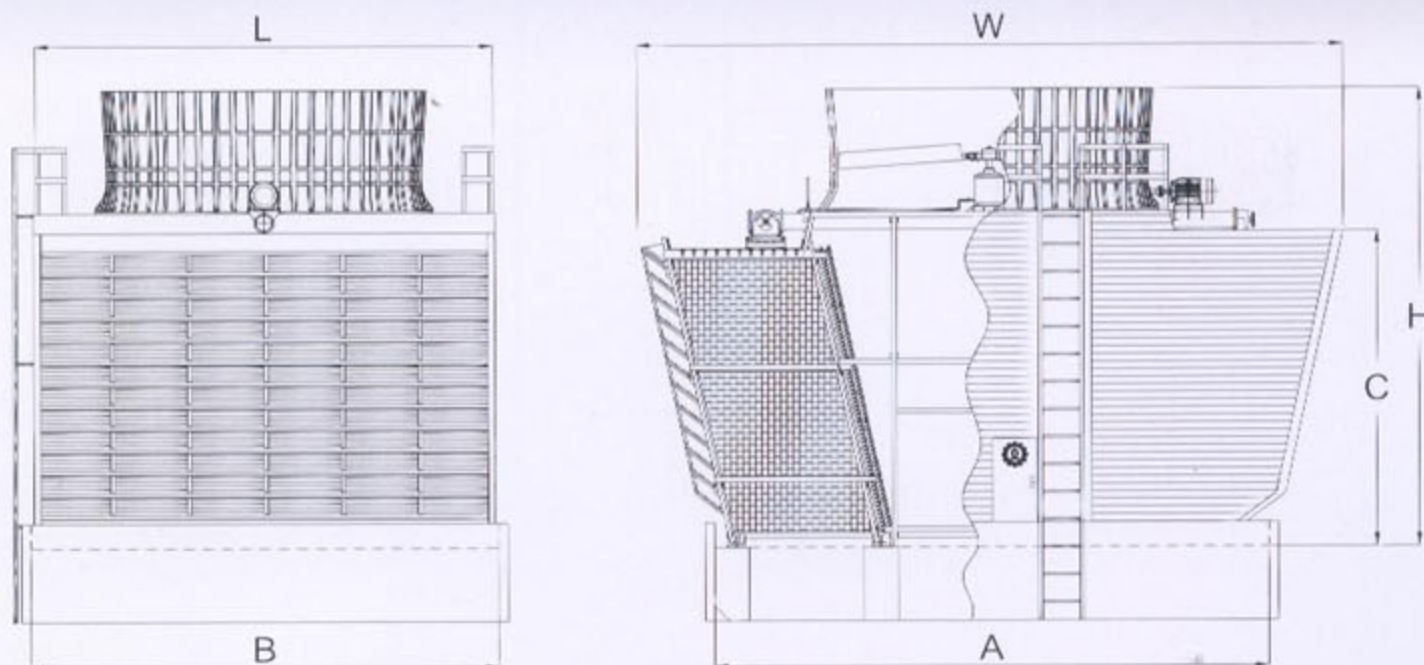
STANDARD DIMENSION



MODEL	NOMINAL WATER FLOW M ³ /min	DIMENSION mm						FAN DIA. m	PUMP HEAD M	OPERATING WEIGHT : kgs
		W	L	H	A	B	C			
361D-C1 2	3.0	5725	2580	3616	4570	2640	2190	1750Ø	4.5	6360
	6.0	5725	5020	3616	4570	5080	2190	1750Ø	4.5	12720
362D-C1 2	3.1	6335	2580	3616	5180	2640	2190	1750Ø	4.5	7270
	6.2	6335	5020	3616	5180	5080	2190	1750Ø	4.5	14540
363D-C1 2	3.7	5725	2580	4240	4165	2640	2815	1750Ø	5.5	7060
	7.4	5725	5020	4240	4165	5080	2815	1750Ø	5.5	14120
364D-C1 2	4.0	6335	2580	4240	4775	2640	2815	1750Ø	5.5	8020
	8.0	6335	5020	4240	4775	5080	2815	1750Ø	5.5	16040
365D-C1 2	4.2	6945	2580	4240	5385	2640	2815	1750Ø	5.5	8970
	8.4	6945	5020	4240	5385	5080	2815	1750Ø	5.5	17940
366D-C1 2	4.5	6335	3800	3166	5180	3860	2190	2400Ø	5.0	9530
	9.0	6335	7460	3166	5180	7520	2190	2400Ø	5.0	19060
367D-C1 2	4.9	6945	3800	3166	5790	3860	2190	2400Ø	5.0	10860
	9.8	6945	7460	3166	5790	7520	2190	2400Ø	5.0	21720
368D-C1 2	5.9	6335	3800	3794	4775	3860	2815	2400Ø	5.5	10570
	11.8	6335	7460	3794	4775	7520	2815	2400Ø	5.5	21140
369D-C1 2	6.4	6945	3800	3794	5385	3860	2815	2400Ø	5.5	11920
	12.8	6945	7460	3794	5385	7520	2815	2400Ø	5.5	23840
370D-C1 2	6.8	7555	3800	3794	5995	3860	2815	2400Ø	5.5	13300
	13.6	7555	7460	3794	5995	7520	2815	2400Ø	5.5	26600
371D-C1 2	7.0	6345	5020	3794	4775	5080	2815	2400Ø	5.5	13360
	14.0	6345	9900	3794	4775	9960	2815	2400Ø	5.5	26720
372D-C1 2	7.5	6945	5020	3794	5385	5080	2815	2400Ø	5.5	15120
	15.0	6945	9900	3794	5385	9960	2815	2400Ø	5.5	30240
373D-C1 2	8.1	7555	5020	3794	5995	5080	2815	2400Ø	5.5	16930
	16.2	7555	9900	3794	5995	9960	2815	2400Ø	5.5	33860
374D-C1 2	9.2	6945	6240	4240	5385	6300	2815	3000Ø	5.5	17410
	18.4	6945	12340	4240	5385	12400	2815	3000Ø	5.5	34820
375D-C1 2	9.8	7555	6240	4240	5995	6300	2815	3000Ø	5.5	19520
	19.6	7555	12340	4240	5995	12400	2815	3000Ø	5.5	39040
376D-C1 2	10.3	8165	6240	4240	6605	6300	2815	3000Ø	5.5	21870
	20.6	8165	12340	4240	6605	12400	2815	3000Ø	5.5	43740

Remark : 1. Standard design condition is based on Water Inlet 37 C, Water Outlet 32 C, Ambient Wet Bulb Temp. 27 C.
2. Operating weight including tower body, water basin with contained up to 130mm water level from the bottom.

STANDARD DIMENSION



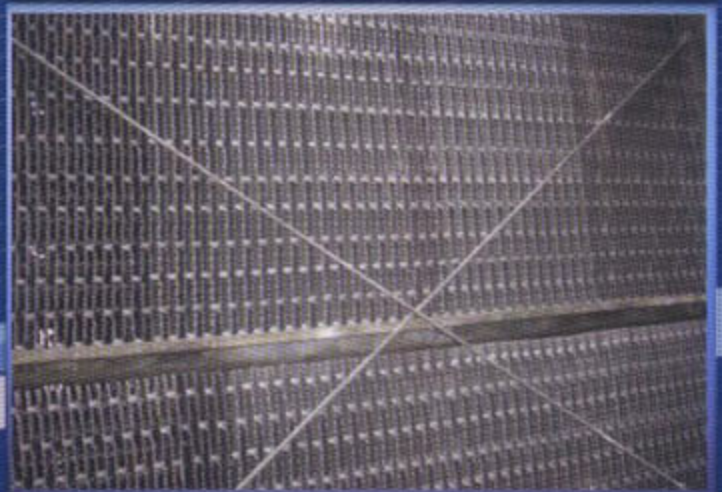
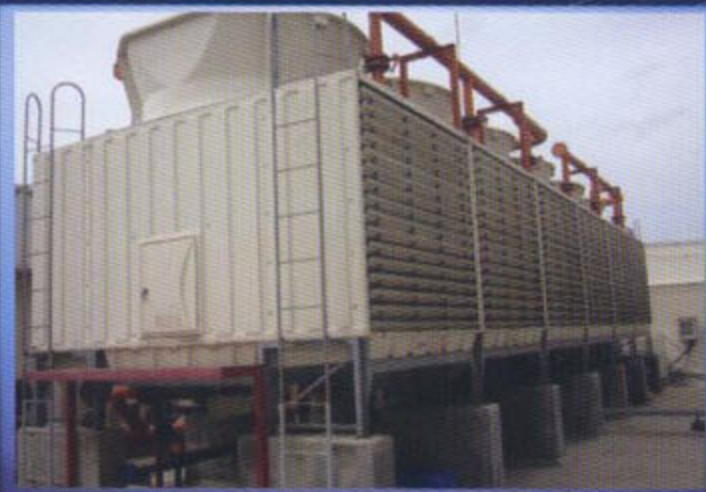
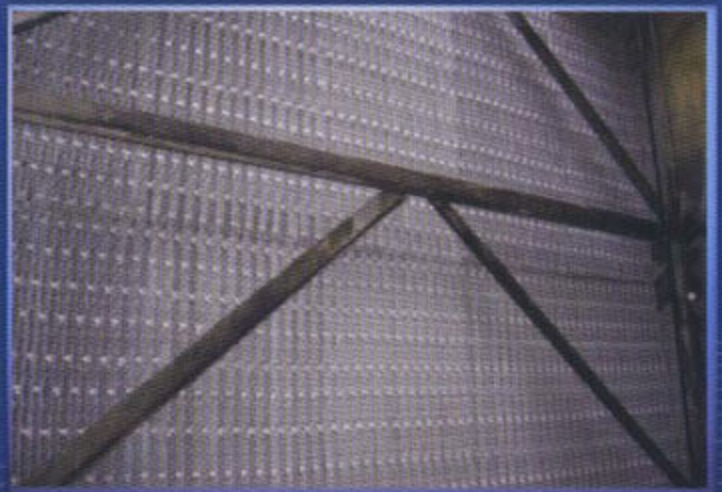
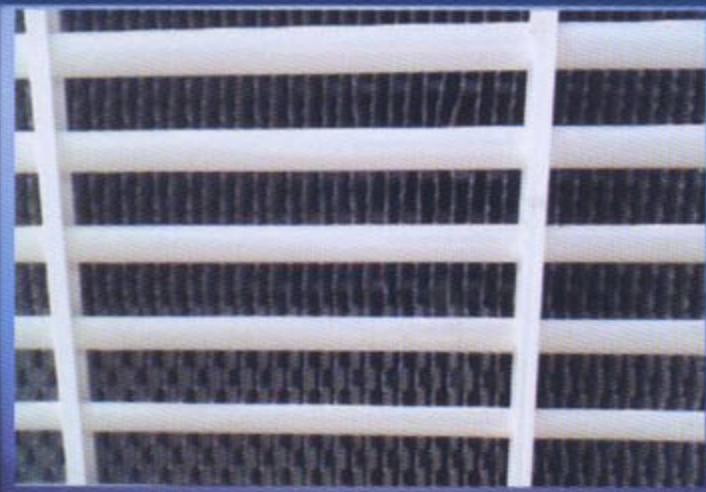
MODEL	NOMINAL	DIMENSION mm						FAN DIA.	PUMP	OPERATING
LHC	WATER FLOW M ³ /mm	W	L	H	A	B	C	m /m	HEAD M	WEIGHT : kgs
451D-C1 2	7.7	7800	3800	6095	5700	3860	4595	3000Ø	6	16910
	15.4	7800	7460	6095	5700	7520	4595	3000Ø	6	33820
452D-C1 451D-C2	10.7	8415	5020	6095	6310	5080	4595	3600Ø	6	22090
	21.4	8415	9900	6095	6310	9960	4595	3600Ø	6	44180
453D-C1 2	12.8	9025	6240	6095	6920	6300	4595	4270Ø	6	28060
	25.6	9025	12340	6095	6920	12400	4595	4270Ø	6	56120
454D-C1 451D-C2	16.2	9025	7460	6595	6920	7520	4595	4270Ø	6	32760
	32.4	9025	14780	6595	6920	14840	4595	4270Ø	6	65520
456D-C1 2	8.6	9025	3800	6095	6920	3860	4595	3000Ø	6	20665
	17.2	9025	7460	6095	6920	7520	4595	3000Ø	6	41330
457D-C1 451D-C2	11.8	9635	5020	6095	7530	5080	4595	3600Ø	6	27015
	23.6	9635	9900	6095	7530	9960	4595	3600Ø	6	54030
458D-C1 2	16.2	10245	6240	6595	8140	6300	4595	4270Ø	6	34120
	32.4	10245	12340	6595	8140	12400	4595	4270Ø	6	68240
459D-C1 451D-C2	17.9	10245	7460	6595	8140	7520	4595	4270Ø	6	39955
	35.8	10245	14780	6595	8140	14840	4595	4270Ø	6	79910
472D-C1 2	15.1	10080	5020	7010	7530	5080	5510	3600Ø	7	30850
	30.3	10080	9900	7010	7530	9960	5510	3600Ø	7	61700
473D-C1 451D-C2	19.1	10590	6240	7510	8140	6300	5510	4270Ø	7	38850
	38.2	10590	12340	7510	8140	12400	5510	4270Ø	7	77700
474D-C1 2	20.6	10590	7460	7510	8140	7520	5510	4270Ø	7	45600
	41.2	10590	14780	7510	8140	14840	5510	4270Ø	7	91200
475D-C1 451D-C2	22.4	11300	7460	7510	8750	7520	5510	4880Ø	7	47600
	44.8	11300	14780	7510	8750	14840	5510	4880Ø	7	95200

- Remark :**
1. Standard design condition is based on Water Inlet 37°C, Water Outlet 32°C, Ambient Wet Bulb Temp. 27°C.
 2. Operating weight including tower body, water basin with contained up to 130mm water level from the bottom.





RENOVATION



SERVICE

