



For Better Cooling Experience

FC SERIES COOLING TOWER

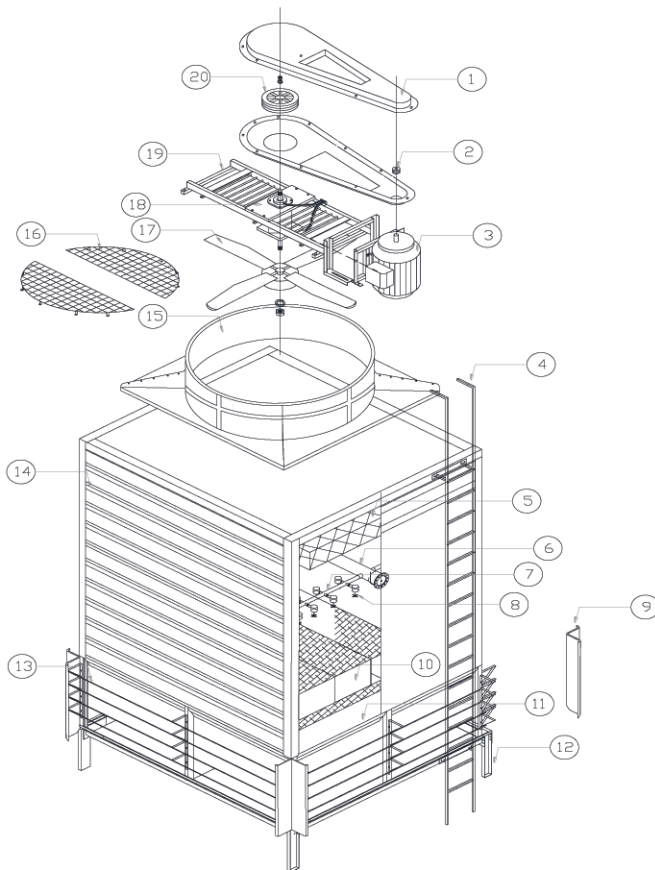
COUNTERFLOW COOLING TOWER



MULTI-CELL 50-1500 HRT COOLING CAPACITY

HIGH EFFICIENCY • CONVINIENT • COMPACT • LOW NOISE • MODULAR DESIGN

FC -SERIES TOWER SPECIFICATIONS



Item	DESCRIPTIONS
1	FRP PULLEY COVER
2	MOTOR PULLEY
3	FAN MOTOR
4	HDGS LADDER
5	DRIFT ELIMINATOR
6	MAIN HEADER
7	LATERAL PIPE
8	NOZZLE
9	LOUVER COVER
10	PVC INFILL
11	CORNER DIFLECTOR
12	TOWER LEG
13	FRP LOUVER
14	FRP CASING
15	FRP FAN STACK
16	HDGS FAN GUARD
17	CAST ALLOY / FRP AXIAL FAN
18	BEARING BOX
19	HDGS FAN HOLDER
20	FAN PULLEY

1.0 - TOWER STRUCTURE

The structure of the tower shall be of hot-dipped galvanized steel (HDGS) to BS 729: 1971 standard. Holes drilling and metal cutting for structure modification are prohibited at site installation.

2.0 - CASING

The casing shall be constructed from moulded UV resistant fibreglass reinforced polyester resin (FRP) with PVC louvers.

3.0 -FRP DISTRIBUTION SYSTEM

The hot water shall be distributed by high efficiency nozzle that spread the hot water evenly on the pvc infill. The nozzle also are specially design not to be easily clogged.

4.0 - INFILL

High grade PVC material for better chemical resistance towards Grease, fat, oil, acid and alkaline conditions. UV absorber and antioxidant stabilizer for longer lifespan and durability to resist UV degradation due to long term sunlight exposure.

5.0 - COLD WATER BASIN & WATER SUMP

Constructed with H.D.G Steel Frame internally laminated with moulded UV resistant fibreglass reinforced polyester resin (FRP).The basin are equiped with suction strainer, make up ball valve, overflow & drain.

6.0 - FAN, MOTOR & DRIVE SYSTEM

Fan - Axial flow fan c/w adjustable pitch angle that are static balaced & assemble.

Motor - The fan motor of efficiency class IE1 shall be totally enclose fan cooled(TEFC) weather proof IP55 with class F insulation type suitable for 415 volts / 3 phase / 50 Hz power supply frequency drive.

V-belt drive system - The pulley shall be made of cast iron with grooves of standard dimensions and the V-belt shall be made of rubber with impregnated fabric designed to BS 1400 standard. The entire V-belt and pulley assembly must be fully enclosed in FRP moulded case to protect the V-belt from contact with humid discharge air.

7.0 - ACCESS & SAFETY

Ladder shall be provided for inspection & maintenance purpose. Hdg steel fan guard are also being provided. Cage ladder & handrail will be provided upon request will additional charges.

FC -SERIES QUICK SELECTION TABLE

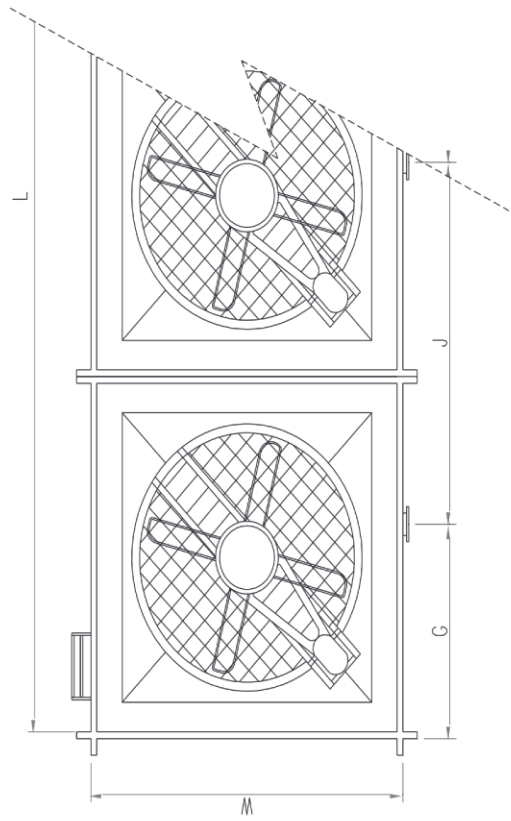
The table shows various combination of cold water supply, hot water return & wet bulb temperature that are commonly used. Please contact HLF for selection that is not stated in table.

Deg F	Return	95	95	95	98.6	95	97	98	98.6	97	100	98.6	100	100
	Supply	85.1	85.1	85.1	89.6	86	87	88	89.6	87	90	89.6	90	90
	Wb	80.6	81.5	81.86	80.6	81	81	82	81.5	82	82	82.4	83	84

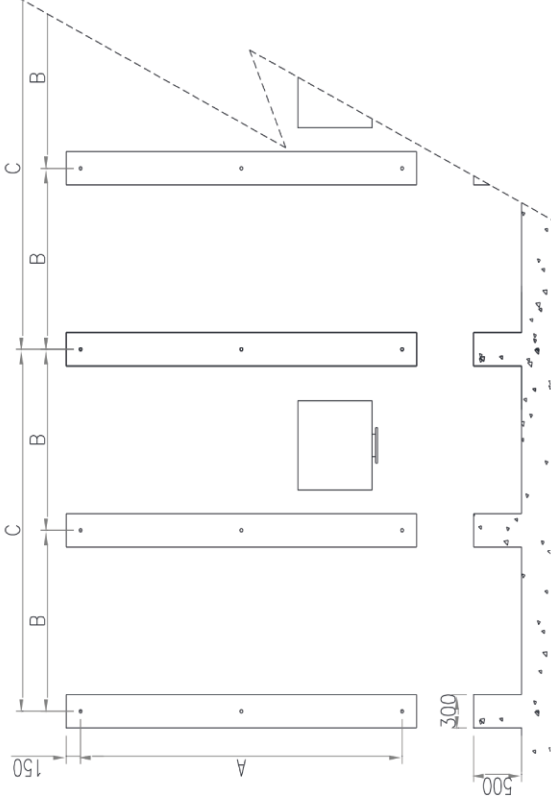
Deg C	Return	35	35	35	37	35	36.1	36.7	37	36.1	37.8	37	37.8	37.8
	Supply	29.5	29.5	29.5	32	30	30.6	31.1	32	30.6	32.2	32	32.2	32.2
	Wb	27	27.5	27.7	27	27.2	27.2	27.8	27.5	27.8	27.8	28	28.3	28.89

Model FC	HRT	Flowrate (m ³ / hr)												
		21	19	18	39	25	27	27	37	24	34	35	32	29
50-1B	50	21	19	18	39	25	27	27	37	24	34	35	32	29
60-1B	60	25	23	22	47	30	32	33	44	29	40	41	38	35
70-1B	70	30	27	25	55	35	38	39	52	34	47	48	44	41
80-1B	80	34	30	29	62	40	43	44	59	38	54	55	50	46
100-1B	100	42	38	36	78	50	54	55	74	48	67	69	63	58
125-1B	125	53	47	45	98	60	68	69	93	60	84	86	78	73
150-1B	150	63	57	54	117	72	81	83	111	72	101	104	94	88
175-1B	175	75	67	63	137	87	95	97	130	85	118	120	109	102
200-1B	200	86	76	72	156	100	108	110	148	97	135	138	125	116
225-1B	225	95	85	81	176	110	122	125	167	108	152	155	141	130
250-1B	250	107	95	90	195	122	135	138	185	120	168	172	157	146
275-1B	280	118	106	101	218	140	151	154	207	134	188	193	176	162
300-1B	300	126	114	108	234	150	162	166	222	145	202	208	188	176
350-1B	350	150	133	126	273	174	200	194	260	168	236	240	220	204
400-1B	400	173	151	144	314	200	216	220	296	193	270	276	251	232
450-1B	450	190	171	162	353	220	243	250	334	217	304	310	282	260
500-1B	500	214	190	180	390	250	270	276	370	241	337	345	314	296
550-1B	550	234	209	198	429	276	297	299	403	265	378	377	352	324
600-1B	600	252	227	216	468	300	324	330	444	290	405	414	377	350
650-1B	650	273	247	233	507	325	351	358	481	312	435	449	410	377
700-1B	700	300	266	252	546	350	378	385	518	338	473	480	439	408
750-1B	750	321	285	270	585	366	410	414	555	360	504	516	471	438
800-1B	800	345	302	288	624	400	432	440	592	386	540	552	502	464
850-1B	850	370	323	306	663	426	458	463	625	412	590	586	550	497
900-1B	900	385	341	323	702	450	486	495	668	434	608	620	565	520
950-1B	950	412	361	342	741	475	513	526	698	463	656	654	610	562
1000-1B	1000	428	380	360	780	500	540	550	740	482	675	690	628	584
1150-1B	1150	504	437	413	897	577	622	628	837	556	787	782	734	681
1250-1B	1250	535	474	449	975	609	675	690	925	600	840	860	785	730
1400-1B	1400	600	532	503	1092	700	756	770	1036	676	946	960	878	816
1500-1B	1500	642	569	539	1170	750	810	828	1110	723	1011	1035	942	888

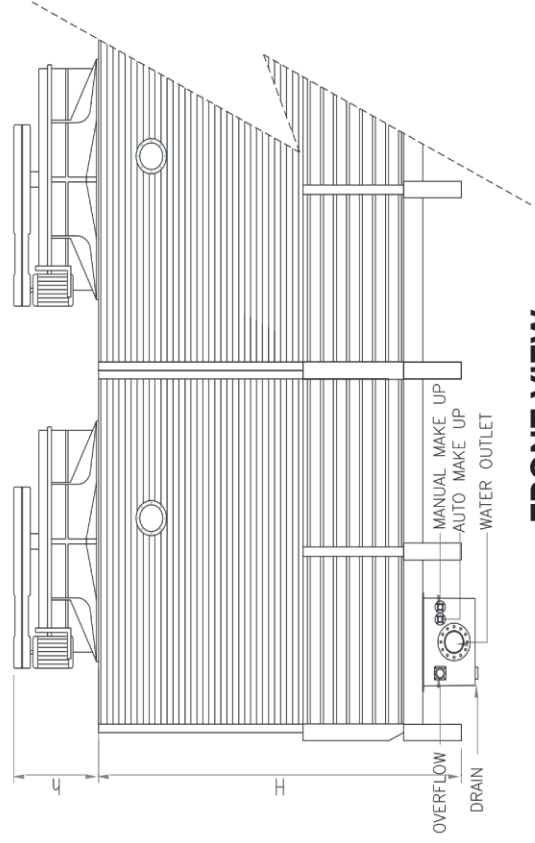
GENERAL ARRANGMENT DRAWING



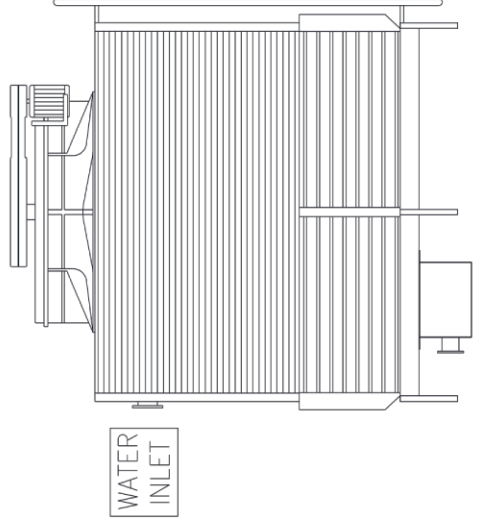
PLAN VIEW



PLINTH DRAWING



FRONT VIEW



SIDE VIEW

TECHNICAL DETAIL FOR 1 CELL

Model	Tower Dimension (mm)				Motor		Axial Fan Diameter		Piping Information (mm)					Weight (Kg)		Anchor Bolt Details (mm)			
	L	W	h	H	Power (kW)	Rated Current (380/415)	F (mm)	RPM	Inlet	Outlet	Drain	Over Flow	Make Up Auto & Manual	Dry Weight	Operating Weight	A	B	C	D
50-1B	1700	1700	760	2510	1.1	3.39/3.1	1290	750	80 X 1	80 X 1	50 X 1	50 X 1	25 X 1	730	1750	1800	1700		
60-1B	1700	1700	760	2510	1.5	4.48/4.1	1290	750	80 X 1	80 X 1	50 X 1	50 X 1	25 X 1	738	1758	1800	1700		
70-1B	1700	1700	760	2510	2.2	5.64/5.16	1290	750	80 X 1	80 X 1	50 X 1	50 X 1	25 X 1	761	1781	1800	1700		
80-1B	1700	1700	760	2510	3	8.2/7.51	1290	750	80 X 1	80 X 1	50 X 1	50 X 1	25 X 1	770	1790	1800	1700		
100-1B	2050	2050	870	2730	3	6.62/6.06	1500	485	100 X 1	100 X 1	50 X 1	50 X 1	25 X 1	950	2320	2150	2050		
125-1B	2050	2050	870	3030	3.7	8.13/7.44	1500	485	100 X 1	100 X 1	50 X 1	50 X 1	25 X 1	956	2326	2150	2050		
150-1B	2650	2650	915	3180	3.7	8.13/7.44	1700	485	150 X 1	150 X 1	50 X 1	50 X 1	40 X 1	1320	3430	2750	2650		
175-1B	2650	2650	915	3180	5.5	12/11	1700	510	150 X 1	150 X 1	50 X 1	50 X 1	40 X 1	1345	3455	2750	2650		
200-1B	2650	2650	880	3530	5.5	12/11	1700	510	200 X 1	200 X 1	50 X 1	50 X 1	40 X 1	1545	3655	2750	2650		
225-1B	3050	3050	880	3530	5.5	12/11	2000	510	200 X 1	200 X 1	50 X 1	50 X 1	40 X 1	1770	4590	3150	1525	3050	
250-1B	3050	3050	880	3530	7.5	14.9/13.6	2000	430	200 X 1	200 X 1	50 X 1	50 X 1	40 X 1	1779	4599	3150	1525	3050	
275-1B	3250	3250	880	3780	7.5	14.9/13.7	2000	430	200 X 1	200 X 1	50 X 1	50 X 1	40 X 1	1880	4700	3350	1625	3250	
300-1B	3250	3250	1060	3780	7.5	14.9/13.7	2400	385	200 X 1	200 X 1	50 X 1	50 X 1	40 X 1	2180	5000	3350	1625	3250	
350-1B	3450	3450	1060	3830	11	22/20.1	2400	385	200 X 1	200 X 1	50 X 1	50 X 1	40 X 1	2231	5051	3550	1725	3450	
400-1B	3450	3450	1320	3830	15	29.2/26.7	2750	370	200 X 1	200 X 1	50 X 1	50 X 1	40 X 1	2430	5620	3550	1725	3450	
450-1B	3850	3850	1290	3830	15	29.2/26.7	3050	370	200 X 1	200 X 1	50 X 1	50 X 1	50 X 1	2740	6460	3950	1925	3850	
500-1B	4250	4250	1290	3930	15	29.2/26.7	3050	370	250 X 1	250 X 1	50 X 1	50 X 1	50 X 1	3710	8550	4350	2125	4250	
550-1B	4250	4250	1290	3930	18.5	36.3/33.2	3050	350	250 X 1	250 X 1	50 X 1	50 X 1	50 X 1	3770	8610	4350	2125	4250	
600-1B	4750	4750	1290	4230	18.5	36.3/33.2	3050	350	250 X 1	250 X 1	50 X 1	50 X 1	50 X 1	4510	11200	4850	2375	4750	
650-1B	5050	5050	1330	4230	18.5	36.3/33.2	3350	310	250 X 1	250 X 1	50 X 1	50 X 1	50 X 1	5620	12050	5150	2525	5050	
700-1B	5050	5050	1330	4230	22	42.9/39.3	3350	330	250 X 1	250 X 1	50 X 1	50 X 1	50 X 1	5635	12065	5150	2525	5050	
750-1B	5450	5450	1330	4230	22	42.9/39.3	3650	275	250 X 1	250 X 1	50 X 1	50 X 1	50 X 1	6520	14870	5550	1815	5450	1820
800-1B	5450	5450	1330	4280	30	56.7/51.9	3650	295	300 X 1	300 X 1	50 X 1	80 X 1	50 X 1	6585	14935	5550	1815	5450	1820
850-1B	5750	5750	1330	4280	30	56.7/51.9	3650	295	300 X 1	300 X 1	50 X 1	80 X 1	50 X 1	7285	19105	5850	1915	5750	1920
900-1B	5750	5750	1330	4330	30	56.7/51.9	4000	275	300 X 1	300 X 1	50 X 1	80 X 1	50 X 1	7385	19205	5850	1915	5750	1920
950-1B	5750	5750	1330	4330	37	72.1/66	4000	265	300 X 1	300 X 1	50 X 1	80 X 1	50 X 1	7445	19265	5850	1915	5750	1920
1000-1B	6050	6050	1330	4330	37	72.1/66	4000	265	300 X 1	300 X 1	50 X 1	80 X 1	50 X 1	8495	20415	6150	2015	6050	2020
1150-1B	6350	6350	1330	4980	45	85.9/78.7	4250	280	300 X 1	300 X 1	50 X 1	80 X 1	50 X 1	10235	23515	6450	1587.5	6350	
1250-1B	6350	6350	1330	4980	45	85.9/78.7	4250	225	300 X 1	300 X 1	50 X 1	80 X 1	50 X 1	11035	24315	6450	1587.5	6350	
1400-1B	7450	7450	1330	5330	45	85.9/78.7	4250	225	350 X 1	350 X 1	50 X 1	80 X 1	50 X 1	13705	28715	7550	1862.5	7450	
1500-1B	7450	7450	1330	5330	55	102/93.5	4250	250	350 X 1	350 X 1	50 X 1	80 X 1	50 X 1	13835	29915	7550	1962.5	7450	

REMARKS :-

- Nominal flow rate will be 13 liter / minute per hrt at 37/32/27 deg celcius conditions
- Balacing connection will available upon request.
- Internal piping diameter shall be the with water outlet diameter

TECHNICAL DETAIL FOR 2 CELLS

Model	Tower Dimension (mm)				Motor		Axial Fan Diameter		Piping Information (mm)					Weight (Kg)		Anchor Bolt Details (mm)			
	L	W	h	H	Power (kW)	Rated Current (380/415)	F (mm)	RPM	Inlet	Outlet	Drain	Over Flow	Make Up Auto & Manual	Dry Weight	Operating Weight	A	B	C	D
100-2B	3400	1700	760	2510	1.1	3.39/3.1	1290	750	80 X 2	80 X 2	50 X 1	50 X 1	40 X 1	1460	3500	1800	1700		
120-2B	3400	1700	760	2510	1.5	4.48/4.1	1290	750	80 X 2	80 X 2	50 X 1	50 X 1	40 X 1	1476	3516	1800	1700		
140-2B	3400	1700	760	2510	2.2	5.64/5.16	1290	750	80 X 2	80 X 2	50 X 1	50 X 1	40 X 1	1522	3562	1800	1700		
160-2B	3400	1700	760	2510	3	8.2/7.51	1290	750	80 X 2	80 X 2	50 X 1	50 X 1	40 X 1	1540	3580	1800	1700		
200-2B	4100	2050	870	2730	3	6.62/6.06	1500	485	100 X 2	125 X 1	50 X 1	50 X 1	40 X 1	1900	4640	2150	2050		
250-2B	4100	2050	870	3030	3.7	8.13/7.44	1500	485	100 X 2	125 X 1	50 X 1	50 X 1	40 X 1	1912	4652	2150	2050		
300-2B	5300	2650	915	3180	3.7	8.13/7.44	1700	485	150 X 2	200 X 1	50 X 1	50 X 1	40 X 1	2640	6860	2750	2650		
350-2B	5300	2650	915	3180	5.5	12/11	1700	510	150 X 2	200 X 1	50 X 1	50 X 1	40 X 1	2690	6910	2750	2650		
400-2B	5300	2650	880	3530	5.5	12/11	1700	510	200 X 2	250 X 1	50 X 1	50 X 1	50 X 1	3090	7310	2750	2650		
450-2B	6100	3050	880	3530	5.5	12/11	2000	510	200 X 2	250 X 1	50 X 1	50 X 1	50 X 1	3540	9180	3150	1525	3050	
500-2B	6100	3050	880	3530	7.5	14.9/13.6	2000	430	200 X 2	250 X 1	50 X 1	50 X 1	50 X 1	3558	9198	3150	1525	3050	
550-2B	6500	3250	880	3780	7.5	14.9/13.7	2000	430	200 X 2	250 X 1	50 X 1	50 X 1	50 X 1	3760	9400	3350	1625	3250	
600-2B	6500	3250	1060	3780	7.5	14.9/13.7	2400	385	200 X 2	250 X 1	50 X 1	50 X 1	50 X 1	4360	10000	3350	1625	3250	
700-2B	6900	3450	1060	3830	11	22/20.1	2400	385	200 X 2	200 X 2	50 X 2	50 X 2	50 X 2	4462	10102	3550	1725	3450	
800-2B	6900	3450	1320	3830	15	29.2/26.7	2750	370	200 X 2	200 X 2	50 X 2	50 X 2	50 X 2	4860	11240	3550	1725	3450	
900-2B	7700	3850	1290	3830	15	29.2/26.7	3050	370	200 X 2	200 X 2	50 X 2	50 X 2	50 X 2	5480	12920	3950	1925	3850	
1000-2B	8500	4250	1290	3930	15	29.2/26.7	3050	370	250 X 2	250 X 2	50 X 2	50 X 2	50 X 2	7420	17100	4350	2125	4250	
1100-2B	8500	4250	1290	3930	18.5	36.3/33.2	3050	350	250 X 2	250 X 2	50 X 2	50 X 2	50 X 2	7540	17220	4350	2125	4250	
1200-2B	9500	4750	1290	4230	18.5	36.3/33.2	3050	350	250 X 2	250 X 2	50 X 2	50 X 2	50 X 2	9020	22400	4850	2375	4750	
1300-2B	10100	5050	1330	4230	18.5	36.3/33.2	3350	310	250 X 2	250 X 2	50 X 2	50 X 2	50 X 2	11240	24100	5150	2525	5050	
1400-2B	10100	5050	1330	4230	22	42.9/39.3	3350	330	250 X 2	250 X 2	50 X 2	50 X 2	50 X 2	11270	24130	5150	2525	5050	
1500-2B	10900	5450	1330	4230	22	42.9/39.3	3650	275	250 X 2	250 X 2	50 X 2	50 X 2	50 X 2	13040	29740	5550	1815	5450	1820
1600-2B	10900	5450	1330	4280	30	56.7/51.9	3650	295	300 X 2	300 X 2	50 X 2	80 X 2	50 X 2	13170	29870	5550	1815	5450	1820
1700-2B	11500	5750	1330	4280	30	56.7/51.9	3650	295	300 X 2	300 X 2	50 X 2	80 X 2	50 X 2	14570	38210	5850	1915	5750	1920
1800-2B	11500	5750	1330	4330	30	56.7/51.9	4000	275	300 X 2	300 X 2	50 X 2	80 X 2	50 X 2	14770	38410	5850	1915	5750	1920
1900-2B	11500	5750	1330	4330	37	72.1/66	4000	265	300 X 2	300 X 2	50 X 2	80 X 2	50 X 2	14890	38530	5850	1915	5750	1920
2000-2B	12100	6050	1330	4330	37	72.1/66	4000	265	300 X 2	300 X 2	50 X 2	80 X 2	50 X 2	16990	40830	6150	2015	6050	2020
2300-2B	12700	6350	1330	4980	45	85.9/78.7	4250	280	300 X 2	300 X 2	50 X 2	80 X 2	50 X 2	20470	47030	6450	1587.5	6350	
2500-2B	12700	6350	1330	4980	45	85.9/78.7	4250	225	300 X 2	300 X 2	50 X 2	80 X 2	50 X 2	22070	48630	6450	1587.5	6350	
2800-2B	14900	7450	1330	5330	45	85.9/78.7	4250	225	350 X 2	350 X 2	50 X 2	80 X 2	50 X 2	27410	57430	7550	1862.5	7450	
3000-2B	14900	7450	1330	5330	55	102/93.5	4250	250	350 X 2	350 X 2	50 X 2	80 X 2	50 X 2	27670	59830	7550	1962.5	7450	

REMARKS :-

- Nominal flow rate will be 13 liter / minute per hrt at 37/32/27 deg celcius conditions
- Balacing connection will available upon request.
- Internal piping diameter shall be the with water outlet diameter

TECHNICAL DETAIL FOR 3 CELLS

Model	Tower Dimension (mm)				Motor		Axial Fan Diameter		Piping Information (mm)					Weight (Kg)		Anchor Bolt Details (mm)			
	L	W	h	H	Power (kW)	Rated Current (380/415)	F (mm)	RPM	Inlet	Outlet	Drain	Over Flow	Make Up Auto & Manual	Dry Weight	Operating Weight	A	B	C	D
150-3B	5100	1700	760	2510	1.1	3.39/3.1	1290	750	80 X 3	100 X 2	50 X 2	50 X 2	25 X 2	2190	5250	1800	1700		
180-3B	5100	1700	760	2510	1.5	4.48/4.1	1290	750	80 X 3	100 X 2	50 X 2	50 X 2	25 X 2	2214	5274	1800	1700		
210-3B	5100	1700	760	2510	2.2	5.64/5.16	1290	750	80 X 3	100 X 2	50 X 2	50 X 2	25 X 2	2283	5343	1800	1700		
240-3B	5100	1700	760	2510	3	8.2/7.51	1290	750	80 X 3	100 X 2	50 X 2	50 X 2	25 X 2	2310	5370	1800	1700		
300-3B	6150	2050	870	2730	3	6.62/6.06	1500	485	100 X 3	125 X 2	50 X 2	50 X 2	25 X 2	2850	6960	2150	2050		
375-3B	6150	2050	870	3030	3.7	8.13/7.44	1500	485	100 X 1	125 X 2	50 X 2	50 X 2	25 X 2	2868	6978	2150	2050		
450-3B	7950	2650	915	3180	3.7	8.13/7.44	1700	485	150 X 3	200 X 2	50 X 2	50 X 2	40 X 2	3960	10290	2750	2650		
525-3B	7950	2650	915	3180	5.5	12/11	1700	510	150 X 3	200 X 2	50 X 2	50 X 2	40 X 2	4035	10365	2750	2650		
600-3B	7950	2650	880	3530	5.5	12/11	1700	510	200 X 3	250 X 2	50 X 2	50 X 2	40 X 2	4635	10965	2750	2650		
675-3B	9150	3050	880	3530	5.5	12/11	2000	510	200 X 3	250 X 2	50 X 2	50 X 2	40 X 2	5310	13770	3150	1525	3050	
750-3B	9150	3050	880	3530	7.5	14.9/13.6	2000	430	200 X 3	250 X 2	50 X 2	50 X 2	40 X 2	5337	13797	3150	1525	3050	
825-3B	9750	3250	880	3780	7.5	14.9/13.7	2000	430	200 X 3	250 X 2	50 X 2	50 X 2	40 X 2	5640	14100	3350	1625	3250	
900-3B	9750	3250	1060	3780	7.5	14.9/13.7	2400	385	200 X 3	250 X 2	50 X 2	50 X 2	40 X 2	6540	15000	3350	1625	3250	
1050-3B	10350	3450	1060	3830	11	22/20.1	2400	385	200 X 3	200 X 3	50 X 3	50 X 3	50 X 3	6693	15153	3550	1725	3450	
1200-3B	10350	3450	1320	3830	15	29.2/26.7	2750	370	200 X 3	200 X 3	50 X 3	50 X 3	50 X 3	7290	16860	3550	1725	3450	
1350-3B	11550	3850	1290	3830	15	29.2/26.7	3050	370	200 X 3	200 X 3	50 X 3	50 X 3	50 X 3	8220	19380	3950	1925	3850	
1500-3B	12750	4250	1290	3930	15	29.2/26.7	3050	370	250 X 3	250 X 3	50 X 3	50 X 3	50 X 3	11130	25650	4350	2125	4250	
1650-3B	12750	4250	1290	3930	18.5	36.3/33.2	3050	350	250 X 3	250 X 3	50 X 3	50 X 3	50 X 3	11310	25830	4350	2125	4250	
1800-3B	14250	4750	1290	4230	18.5	36.3/33.2	3050	350	250 X 3	250 X 3	50 X 3	50 X 3	50 X 3	13530	33600	4850	2375	4750	
1950-3B	15150	5050	1330	4230	18.5	36.3/33.2	3350	310	250 X 3	250 X 3	50 X 3	50 X 3	50 X 3	16860	36150	5150	2525	5050	
2100-3B	15150	5050	1330	4230	22	42.9/39.3	3350	330	250 X 3	250 X 3	50 X 3	50 X 3	50 X 3	16905	36195	5150	2525	5050	
2250-3B	16350	5450	1330	4230	22	42.9/39.3	3650	275	250 X 3	250 X 3	50 X 3	50 X 3	50 X 3	19560	44610	5550	1815	5450	1820
2400-3B	16350	5450	1330	4280	30	56.7/51.9	3650	295	300 X 3	300 X 3	50 X 3	50 X 3	50 X 3	19755	44805	5550	1815	5450	1820
2550-3B	17250	5750	1330	4280	30	56.7/51.9	3650	295	300 X 3	300 X 3	50 X 3	50 X 3	50 X 3	21855	57315	5850	1915	5750	1920
2700-3B	17250	5750	1330	4330	30	56.7/51.9	4000	275	300 X 3	300 X 3	50 X 3	50 X 3	50 X 3	22155	57615	5850	1915	5750	1920
2850-3B	17250	5750	1330	4330	37	72.1/66	4000	265	300 X 3	300 X 3	50 X 3	50 X 3	50 X 3	22335	57795	5850	1915	5750	1920
3000-3B	18150	6050	1330	4330	37	72.1/66	4000	265	300 X 3	300 X 3	50 X 3	50 X 3	50 X 3	25485	61245	6150	2015	6050	2020
3450-3B	19050	6350	1330	4980	45	85.9/78.7	4250	280	300 X 3	300 X 3	50 X 3	50 X 3	50 X 3	30705	70545	6450	1587.5	6350	
3750-3B	19050	6350	1330	4980	45	85.9/78.7	4250	225	300 X 3	300 X 3	50 X 3	50 X 3	50 X 3	33105	72945	6450	1587.5	6350	
4200-3B	22350	7450	1330	5330	45	85.9/78.7	4250	225	350 X 3	350 X 3	50 X 3	50 X 3	50 X 3	41115	86145	7550	1862.5	7450	
4500-3B	22350	7450	1330	5330	55	102/93.5	4250	250	350 X 3	350 X 3	50 X 3	50 X 3	50 X 3	41505	89745	7550	1962.5	7450	

REMARKS :-

- 1.Nominal flow rate will be 13 liter / minute per hrt at 37/32/27 deg celcius conditions
- 2.Balacing connection will available upon request.
- 3.Internal piping diameter shall be the with water outlet diameter

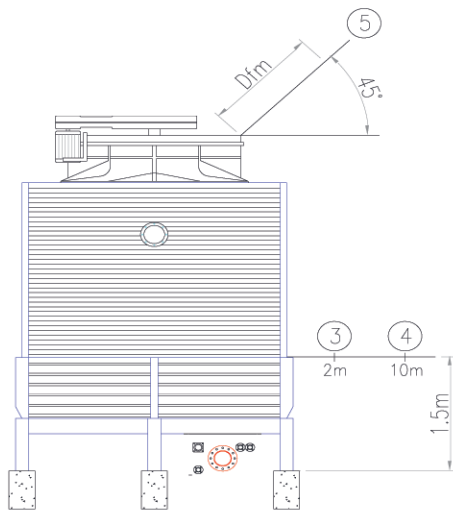
TECHNICAL DETAIL FOR 4 CELLS

Model	Tower Dimension (mm)				Motor		Axial Fan Diameter		Piping Information (mm)					Weight (Kg)		Anchor Bolt Details (mm)			
	L	W	h	H	Power (kW)	Rated Current (380/415)	F (mm)	RPM	Inlet	Outlet	Drain	Over Flow	Make Up Auto & Manual	Dry Weight	Operating Weight	A	B	C	D
200-4B	6800	1700	760	2510	1.1	3.39/3.1	1290	750	80 X 4	100 X 2	50 X 2	40 X 2	40 X 2	2920	7000	1800	1700		
240-4B	6800	1700	760	2510	1.5	4.48/4.1	1290	750	80 X 4	100 X 2	50 X 2	40 X 2	40 X 2	2952	7032	1800	1700		
280-4B	6800	1700	760	2510	2.2	5.64/5.16	1290	750	80 X 4	100 X 2	50 X 2	40 X 2	40 X 2	3044	7124	1800	1700		
320-4B	6800	1700	760	2510	3	8.2/7.51	1290	750	80 X 4	100 X 2	50 X 2	40 X 2	40 X 2	3080	7160	1800	1700		
400-4B	8200	2050	870	2730	3	6.62/6.06	1500	485	100 X 4	125 X 2	50 X 2	50 X 2	40 X 2	3800	9280	2150	2050		
500-4B	8200	2050	870	3030	3.7	8.13/7.44	1500	485	100 X 4	125 X 2	50 X 2	50 X 2	40 X 2	3824	9304	2150	2050		
600-4B	10600	2650	915	3180	3.7	8.13/7.44	1700	485	150 X 4	200 X 2	50 X 2	50 X 2	40 X 2	5280	13720	2750	2650		
700-4B	10600	2650	915	3180	5.5	12/11	1700	510	150 X 4	200 X 2	50 X 2	50 X 2	40 X 2	5380	13820	2750	2650		
800-4B	10600	2650	880	3530	5.5	12/11	1700	510	200 X 4	250 X 2	50 X 2	50 X 2	50 X 2	6180	14620	2750	2650		
900-4B	12200	3050	880	3530	5.5	12/11	2000	510	200 X 4	250 X 2	50 X 2	50 X 2	50 X 2	7080	18360	3150	1525	3050	
1000-4B	12200	3050	880	3530	7.5	14.9/13.6	2000	430	200 X 4	250 X 2	50 X 2	50 X 2	50 X 2	7116	18396	3150	1525	3050	
1100-4B	13000	3250	880	3780	7.5	14.9/13.7	2000	430	200 X 4	250 X 2	50 X 2	50 X 2	50 X 2	7520	18800	3350	1625	3250	
1200-4B	13000	3250	1060	3780	7.5	14.9/13.7	2400	385	200 X 4	250 X 2	50 X 2	50 X 2	50 X 2	8720	20000	3350	1625	3250	
1400-4B	13800	3450	1060	3830	11	22/20.1	2400	385	200 X 4	200 X 4	50 X 4	50 X 4	50 X 4	8924	20204	3550	1725	3450	
1600-4B	13800	3450	1320	3830	15	29.2/26.7	2750	370	200 X 4	200 X 4	50 X 4	50 X 4	50 X 4	9720	22480	3550	1725	3450	
1800-4B	15400	3850	1290	3830	15	29.2/26.7	3050	370	200 X 4	200 X 4	50 X 4	50 X 4	50 X 4	10960	25840	3950	1925	3850	
2000-4B	17000	4250	1290	3930	15	29.2/26.7	3050	370	250 X 4	250 X 4	50 X 4	50 X 4	50 X 4	14840	34200	4350	2125	4250	
2200-4B	17000	4250	1290	3930	18.5	36.3/33.2	3050	350	250 X 4	250 X 4	50 X 4	50 X 4	50 X 4	15080	34440	4350	2125	4250	
2400-4B	19000	4750	1290	4230	18.5	36.3/33.2	3050	350	250 X 4	250 X 4	50 X 4	50 X 4	50 X 4	18040	44800	4850	2375	4750	
2600-4B	20200	5050	1330	4230	18.5	36.3/33.2	3350	310	250 X 4	250 X 4	50 X 4	50 X 4	50 X 4	22480	48200	5150	2525	5050	
2800-4B	20200	5050	1330	4230	22	42.9/39.3	3350	330	250 X 4	250 X 4	50 X 4	50 X 4	50 X 4	22540	48260	5150	2525	5050	
3000-4B	21800	5450	1330	4230	22	42.9/39.3	3650	275	250 X 4	250 X 4	50 X 4	50 X 4	50 X 4	26080	59480	5550	1815	5450	1820
3200-4B	21800	5450	1330	4280	30	56.7/51.9	3650	295	300 X 4	300 X 4	50 X 4	80 X 4	50 X 4	26340	59740	5550	1815	5450	1820
3400-4B	23000	5750	1330	4280	30	56.7/51.9	3650	295	300 X 4	300 X 4	50 X 4	80 X 4	50 X 4	29140	76420	5850	1915	5750	1920
3600-4B	23000	5750	1330	4330	30	56.7/51.9	4000	275	300 X 4	300 X 4	50 X 4	80 X 4	50 X 4	29540	76820	5850	1915	5750	1920
3800-4B	23000	5750	1330	4330	37	72.1/66	4000	265	300 X 4	300 X 4	50 X 4	80 X 4	50 X 4	29780	77060	5850	1915	5750	1920
4000-4B	24200	6050	1330	4330	37	72.1/66	4000	265	300 X 4	300 X 4	50 X 4	80 X 4	50 X 4	33980	81660	6150	2015	6050	2020
4600-4B	25400	6350	1330	4980	45	85.9/78.7	4250	280	300 X 4	300 X 4	50 X 4	80 X 4	50 X 4	40940	94060	6450	1587.5	6350	
5000-4B	25400	6350	1330	4980	45	85.9/78.7	4250	225	300 X 4	300 X 4	50 X 4	80 X 4	50 X 4	44140	97260	6450	1587.5	6350	
5600-4B	29800	7450	1330	5330	45	85.9/78.7	4250	225	350 X 4	350 X 4	50 X 4	80 X 4	50 X 4	54820	114860	7550	1862.5	7450	
6000-4B	29800	7450	1330	5330	55	102/93.5	4250	250	350 X 4	350 X 4	50 X 4	80 X 4	50 X 4	55340	119660	7550	1962.5	7450	

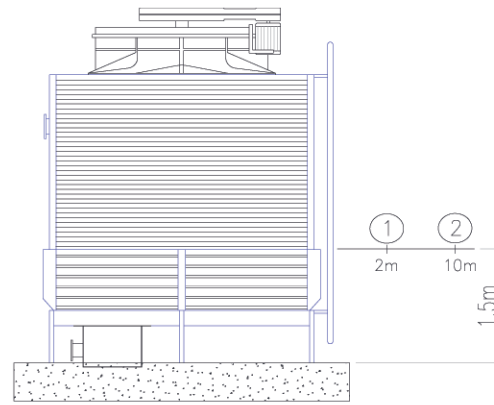
REMARKS :-

- Nominal flow rate will be 13 liter / minute per hrt at 37/32/27 deg celcius conditions
- Balancing connection will available upon request.
- Internal piping diameter shall be the with water outlet diameter

FC -SERIES SOUND LEVEL



FRONT VIEW



SIDE VIEW

REMARKS :-

1.For measuring item no 5, the noise meter shall be place 45 degrees above the top edge of the fan stack & shall be in opposite of motor side.

Model FC	Side View		Front View		Fan
	1	2	3	4	5
50-1B	70.0	62.0	70.0	62.0	69.0
60-1B	70.0	62.0	70.0	62.0	69.5
70-1B	71.0	63.0	71.0	63.0	70.0
80-1B	71.0	63.0	71.0	63.0	70.5
100-1B	71.0	63.0	71.0	63.0	70.5
125-1B	72.0	64.0	72.0	64.0	71.0
150-1B	72.0	64.0	72.0	64.0	71.5
175-1B	72.0	64.0	72.0	64.0	72.0
200-1B	73.0	65.0	73.0	65.0	72.0
225-1B	73.0	65.0	73.0	65.0	72.5
250-1B	73.0	65.0	73.0	65.0	72.5
275-1B	73.5	65.5	73.5	65.5	73.0
300-1B	74.0	66.0	74.0	66.0	73.0
350-1B	74.5	66.5	74.5	66.5	73.5
400-1B	78.0	70.0	78.0	70.0	78.0
450-1B	78.0	70.0	78.0	70.0	78.0
500-1B	78.0	70.0	78.0	70.0	79.0
550-1B	79.0	71.0	79.0	71.0	80.0
600-1B	80.0	72.0	80.0	72.0	81.0
650-1B	81.0	73.0	81.0	73.0	81.0
700-1B	82.0	74.0	82.0	74.0	81.0
750-1B	82.0	74.0	82.0	74.0	82.0
800-1B	83.0	75.0	83.0	75.0	82.0
850-1B	83.0	75.0	83.0	75.0	82.0
900-1B	84.0	76.0	84.0	76.0	83.0
950-1B	84.0	76.0	84.0	76.0	83.0
1000-1B	85.0	77.0	85.0	77.0	83.0
1150-1B	85.0	77.0	85.0	77.0	83.0
1250-1B	86.0	78.0	86.0	78.0	84.0
1400-1B	86.0	78.0	86.0	78.0	84.0
1500-1B	87.0	79.0	87.0	79.0	84.0

PROJECT REFERENCE



Modernria Plastic Industries (Penang)



UTM Skudai (Johor)



Kossan Paint (Meru Klang)



UTM Skudai (Johor)



Lynas Advanced Material (Pahang)



Plastics Manufacture (Sungai Petani)

MAKE UP WATER CALCULATIONS

NOTATIONS

FLOW RATE	m
INLET TEMPERATURE	T ₁
OUTLET TEMPERATURE	T ₂
SPECIFIC HEAT (4.2 kJ/kg °C)	C _p
LATENT HEAT OF EVAPORATION (2520kJ/kg)	R
DRIFT LOSS (%) FOR HX TOWER	0.02%

EXAMPLE

1. COOLING TOWER MODEL	FC 100-1B
FLOW RATE	78 M ³ /H
INLET TEMPERATURE	37 °C
OUTLET TEMPERATURE	32 °C
AMBIENT WET BULB TEMPERATURE	27 °C

YOUR SELECTION

1. COOLING TOWER MODEL	<input type="text"/>
FLOW RATE	<input type="text"/>
INLET TEMPERATURE	<input type="text"/>
OUTLET TEMPERATURE	<input type="text"/>
AMBIENT WET BULB TEMPERATURE	<input type="text"/>

REMARKS : FLOWRATE MUST BE IN (M3/H) & TEMPERATURE IN (°C)

2. EVAPORATION LOSS (E)

$$\begin{aligned}
 E &= (T_1 - T_2) / R \times m \times C_p \\
 &= (37 - 32) / 2520 \times 78 \times 4.2 \\
 &= 0.65 \text{ M}^3/\text{H}
 \end{aligned}$$

3. DRIFT LOSS (D)

$$\begin{aligned}
 D &= m \times \text{DRFIT LOSS (\%)} \\
 &= 78 \times 0.02 / 100 \\
 &= 0.0156 \text{ M}^3/\text{H}
 \end{aligned}$$

4. BLOWN DOWN (BD)

$$\begin{aligned}
 BD &= ((E + D) / 4) \\
 &= 0.1664 \text{ M}^3/\text{H}
 \end{aligned}$$

5. MAKE UP (MU)

$$\begin{aligned}
 MU &= E + D + BD \\
 &= 0.65 + 0.0156 + 0.1664 \\
 &= 0.832 \text{ M}^3/\text{H}
 \end{aligned}$$

2. EVAPORATION LOSS (E)

$$E = (T_1 - T_2) / R \times m \times C_p$$

3. DRIFT LOSS (D)

$$D = m \times \text{DRFIT LOSS (\%)}$$

4. BLOWN DOWN (BD)

$$BD = ((E + D) / 4)$$

5. MAKE UP (MU)

$$MU = E + D + BD$$



HLF COOLING SDN BHD

201901043853 (1353183-A)

HQ OFFICE /SALES OFFICE

No.12A-3, Jalan Puteri 2/3,
Bandar Puteri,
47100 Puchong,
Selangor Darul Ehsan.

FACTORY

AL165E, Jalan Industri,
Kampung Baru Sungai Buloh,
Seksyen U19, 47100 Sungai Buloh,
Selangor Darul Ehsan.

Tel: 03-8060 3183

Email: hlfcooling@gmail.com

Website: www.hlfcooling.com.my