

EC-S

PACKAGED COOLING TOWER
SINGLE-CELL UP TO 1700HRT COOLING CAPACITY

TRUWATER[®]

High Performance Counterflow Type



ISO9001
CERTIFIED

CTI
CERTIFIED

- ENERGY CONSERVATION
- SPACE SAVING • DESIGN FLEXIBILITY



EC-S

SERIES COOLING TOWER

SINGLE-CELL UP TO 1700HRT COOLING CAPACITY

TRUWATER[®]

INTRODUCTION

EC-S Series is an induced draft counter-flow, film filled, FRP multi-cell square cooling tower designed for the equipment cooling, and industrial process cooling and air conditioning applications.

The EC-S Series Cooling Tower is designed to meet maximum performance and reliability, and minimum maintenance.

The thermal performance of EC-S Series has been certified by CTI in accordance with CTI Standard STD-201.

EC-S Series Cooling Towers are designed and provided with high quality v-belt & pulley drive system or right-angle gear reducer drive system for trouble free operation.



ADVANTAGES

Efficient Drift Eliminator

Up to 0.001% drift loss, solves water carry over problems.

Reduced Pump Head

Spray nozzle pressure less than 1m.

High Performance Fill

Reduces energy consumption.

Simplified Piping layout

Streamlined layout and lower piping cost.

Reliable Mechanical Driver System

Trouble free operation.

Safety Maintenance Platform

Meets OSHA requirements.

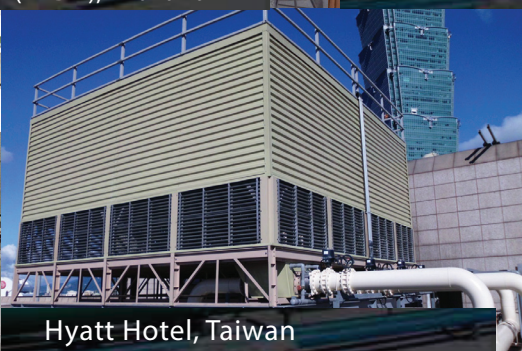


National Institute of Development Administration (NIDA), Thailand

Anantara Hua Hin, Thailand



ITE, Singapore

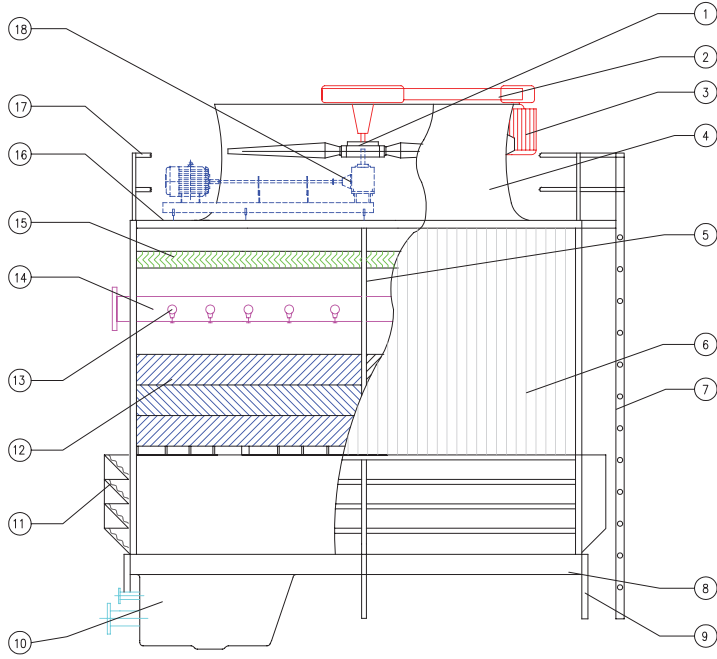


Hyatt Hotel, Taiwan



Pertamina Plaju, Indonesia

FEATURES



No	Description	Material / Specification
1	Fan Assembly	Aluminium Alloy
2	V-Belt and Pulley System	FRP Pulley Cover
3	Motor	Weather Proof TEFC type
4	Fan Stack	FRP
5	Main Frame Structure	HDG Steel
6	Casing	FRP
7	Ladder	HDG Steel
8	Cold Water Basin Floor	FRP
9	Cold Water Basin Frame	HDG Steel
10	Cold Water Basin Sump	FRP
11	Louver	FRP
12	High Performance Film Fill Pack	PVC
13	Non-Clog Spray Nozzle	Polypropylene
14	Water Distribution System	PVC
15	Drift Eliminator	PVC
16	Safety Maintenance Platform	HDG Steel
17	Safety Handrail	HDG Steel
18	Gear Box System	Optional

Model Definition Example

EC S 1111 B 4 - 1 B S M

EC-S Series

Structure Material

- S = HDG Steel
- F = FRP Pultruded
- T = Timber
- X = Stainless Steel

Nominal Cell Size

Motor Size

No. of Cell(s)

No of air intake

- I = Inlet at bottom
- A = Additional Items
- M = Modification/ Non-CTI listed

- L = Low Noise
- S = Super Low Noise
- E = Energy Saving

- B = Belt & Pulley Drive
- G = Gear Reducer Drive



Plexus Penang, Malaysia



Tang Plaza, Singapore



UKM Bangi, Malaysia



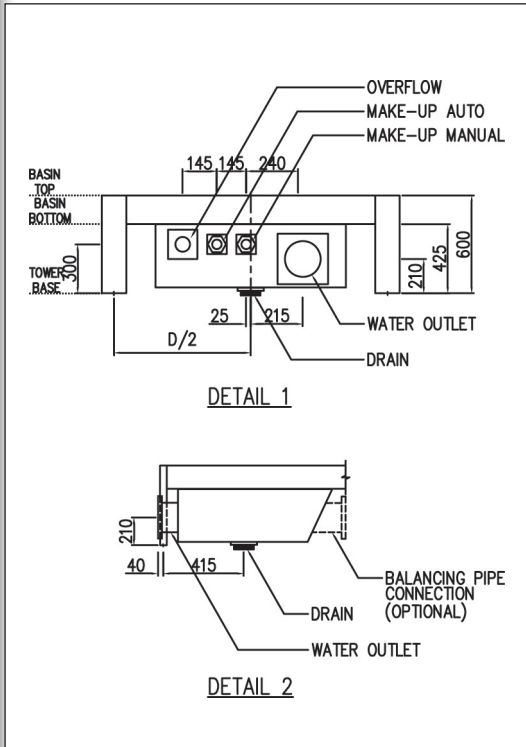
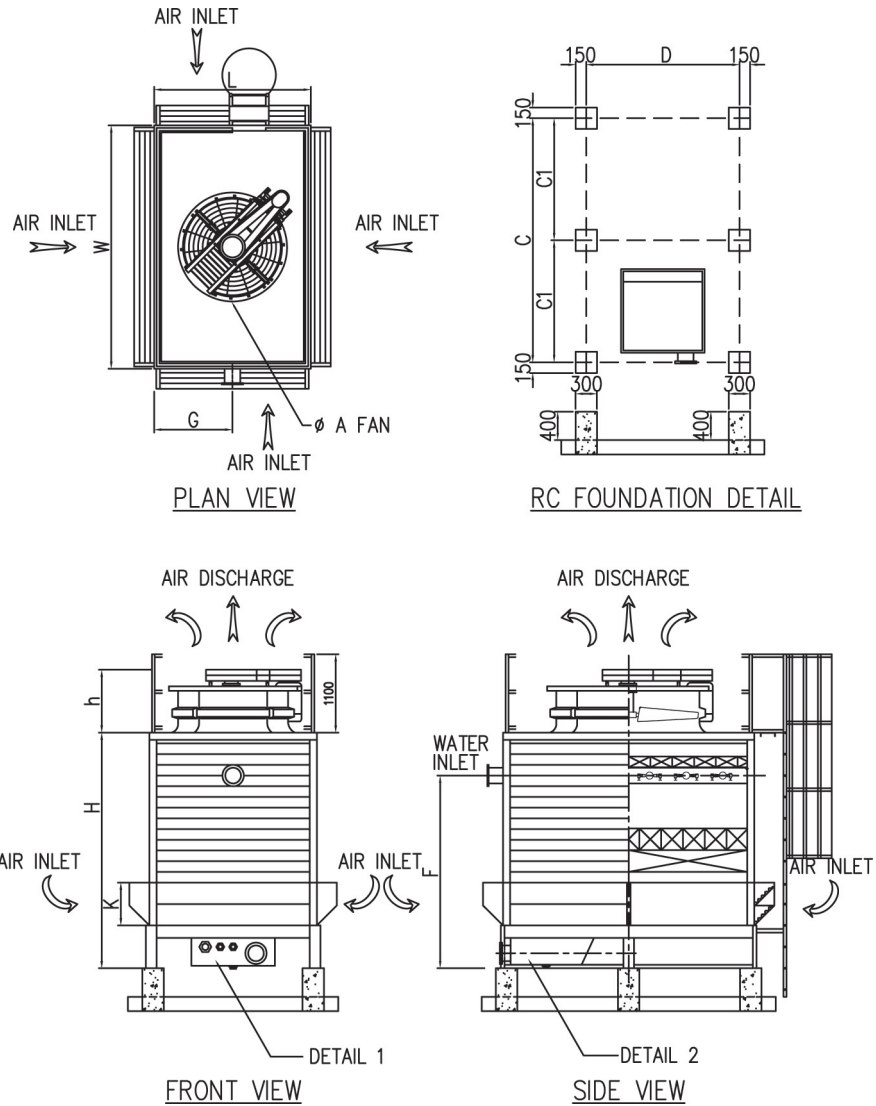
Setiawalk Puchong, Malaysia



Osram Penang, Malaysia

OUTLINE AND FOUNDATION DRAWINGS (SINGLE CELL)

ECS 0711A4 ECS 0811A4
 ECS 0711B4 ECS 0811B4
 ECS 0711C4 ECS 0811C4
 ECS 0711D4 ECS 0811D4
 ECS 0711E4 ECS 0811E4

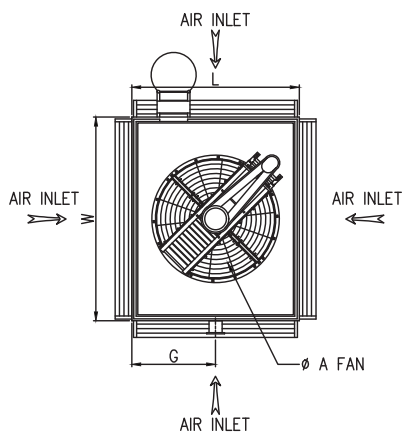


NOTE : ALL DIMENSION IN MM.

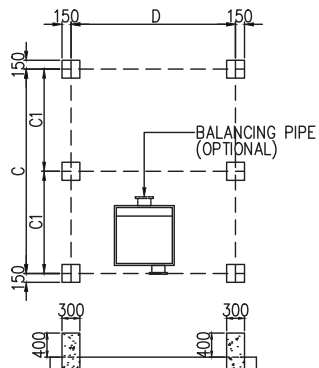
EC-S SERIES RANGE

Tower Model ECS	OVERALL DIMENSION					MOTOR				AXIAL FLOW FAN				
	L	W	H*	h	K*	Rated Output (kW)	Current at 415V (AMP)	Type	Power Source	A	Fan Speed (RPM)	No of blades	Drive System	
0711A4	2195	3410	3300	950	600	4.0	8.1	TEFC, Outdoor, 3 phase, Induction Motor, 4 poles	3 ph / 380 V / 50hz or 3ph / 415V / 50hz	1525	580	Four (4) to Six (6)	V-Belt and Pulley	
0711B4						5.5	11.0				580			
0711C4						7.5	13.6				580			
0711D4						11.0	20.1				580			
0711E4						15.0	26.7				580			
0811A4	2500	3410	3600	950	900	4.0	8.1			1830	485			
0811B4						5.5	11.0			485				
0811C4						7.5	13.6			485				
0811D4						11.0	20.1			510				
0811E4						15.0	26.7			510				
0911A4	2805	3410	3600	950	900	4.0	8.1			2135				425
0911B4						5.5	11.0							425
0911C4						7.5	13.6							425
0911D4						11.0	20.1							425
0911E4						15.0	26.7							425

OUTLINE AND FOUNDATION DRAWINGS (SINGLE CELL)

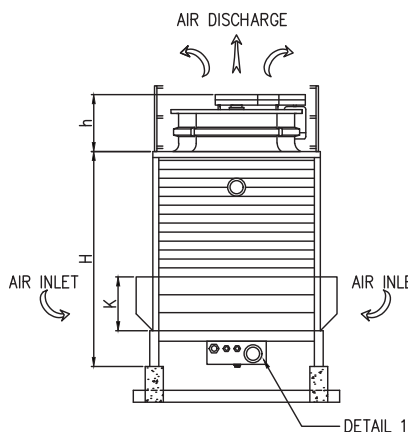


PLAN VIEW

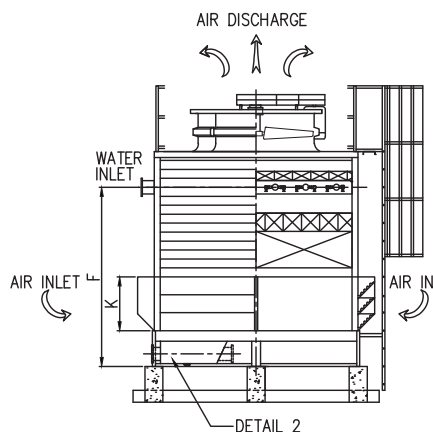


RC FOUNDATION DETAIL

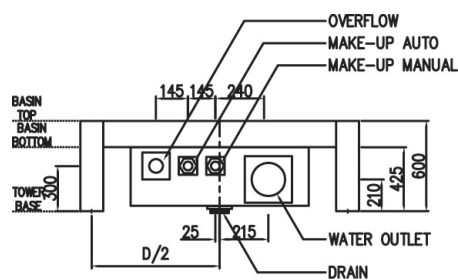
ECS 0911A4
ECS 0911B4
ECS 0911C4
ECS 0911D4
ECS 0911E4



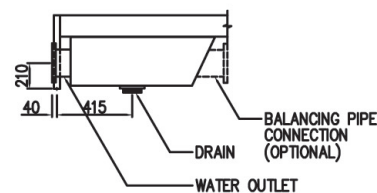
FRONT VIEW



SIDE VIEW



DETAIL 1



DETAIL 2

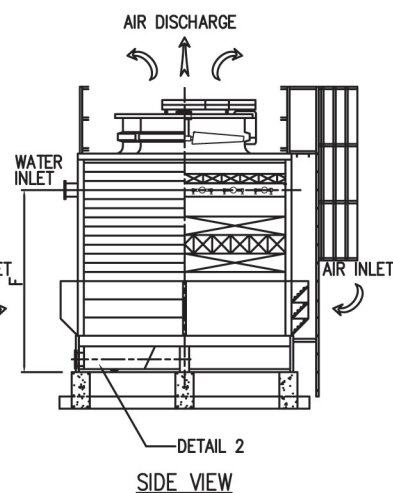
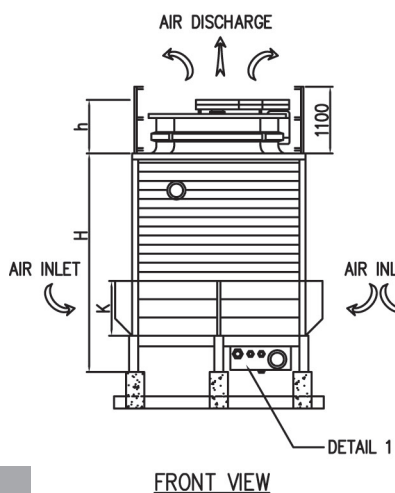
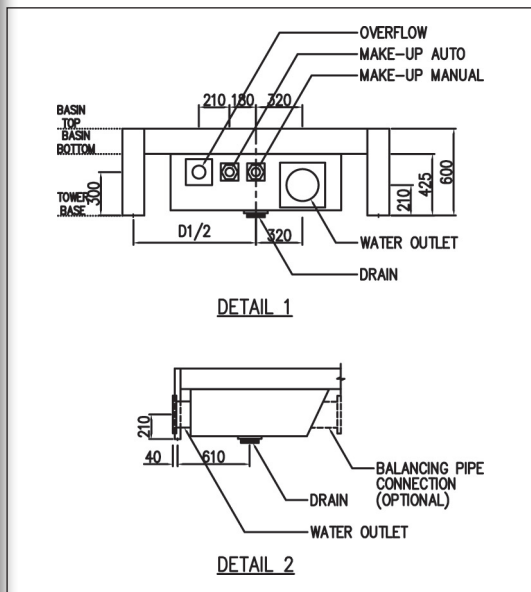
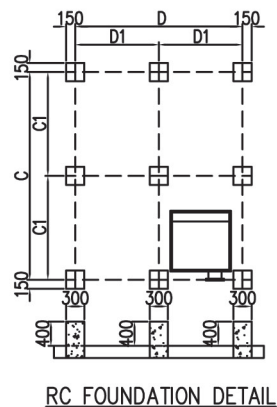
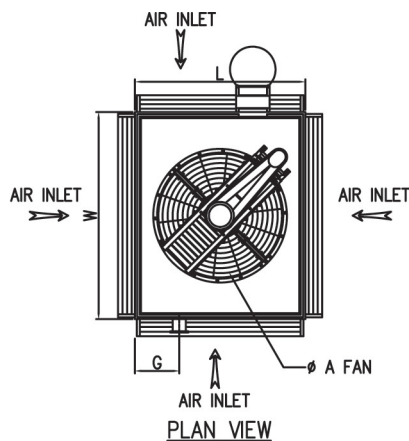
NOTE : ALL DIMENSION IN MM.

EC-S SERIES RANGE

Tower Model ECS	ANCHOR BOLTS DATA				PIPING DATA			PIPING SIZE						WEIGHT (KG)	
	C	D	C1	C2	D1	F*	G	Internal Piping	Water Inlet	Water Outlet	Over-flow	Drain	Make up Auto & Manual	Dry Weight	Oper. Weight
0711A4	3420	2145	1710	-	-	2700	1098	150 x 1	150 x 1	150 x 1	50 x 1	50 x 1	50 x 1	1400	3060
0711B4								150 x 1	150 x 1	150 x 1	50 x 1	50 x 1	50 x 1	1430	3200
0711C4								150 x 1	150 x 1	150 x 1	50 x 1	50 x 1	50 x 1	1440	3320
0711D4								200 x 1	200 x 1	200 x 1	50 x 1	50 x 1	50 x 1	1460	3440
0711E4								200 x 1	200 x 1	200 x 1	50 x 1	50 x 1	50 x 1	1481	3461
0811A4	3420	2450	1710	-	-	3000	1250	150 x 1	150 x 1	150 x 1	50 x 1	50 x 1	50 x 1	1530	3390
0811B4								200 x 1	200 x 1	200 x 1	50 x 1	50 x 1	50 x 1	1560	3690
0811C4								200 x 1	200 x 1	200 x 1	50 x 1	50 x 1	50 x 1	1580	3940
0811D4								200 x 1	200 x 1	200 x 1	50 x 1	50 x 1	50 x 1	1600	4140
0811E4								200 x 1	200 x 1	200 x 1	50 x 1	50 x 1	50 x 1	1621	4161
0911A4	3420	2755	1710	-	1378	3000	729	200 x 1	200 x 1	200 x 1	50 x 1	50 x 1	50 x 1	1630	3950
0911B4								200 x 1	200 x 1	200 x 1	50 x 1	50 x 1	50 x 1	1670	4250
0911C4								200 x 1	200 x 1	200 x 1	50 x 1	50 x 1	50 x 1	1750	4510
0911D4								200 x 1	200 x 1	200 x 1	50 x 1	50 x 1	50 x 1	1790	4650
0911E4								200 x 1	200 x 1	200 x 1	50 x 1	50 x 1	50 x 1	1811	4671

OUTLINE AND FOUNDATION DRAWINGS (SINGLE CELL)

ECS 1010B4 ECS 1012B4
 ECS 1010C4 ECS 1012C4
 ECS 1010D4 ECS 1012D4
 ECS 1010E4 ECS 1012E4
 ECS 1010F4 ECS 1012F4

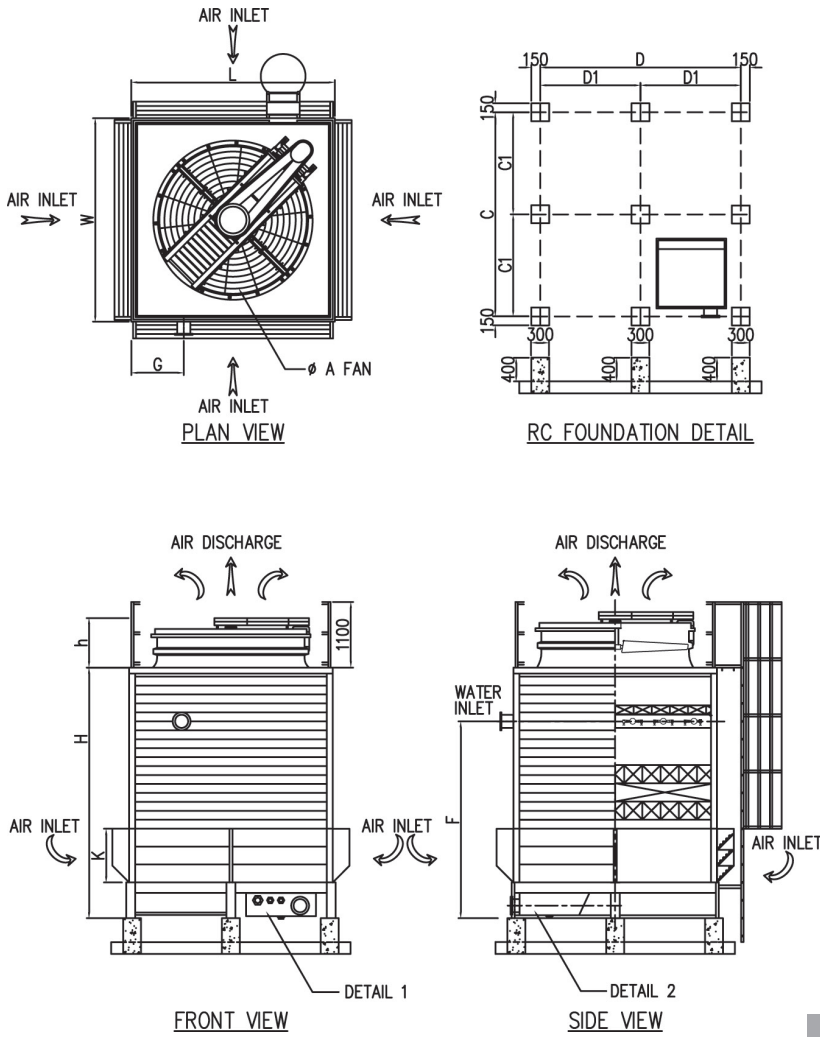


NOTE : ALL DIMENSION IN MM.

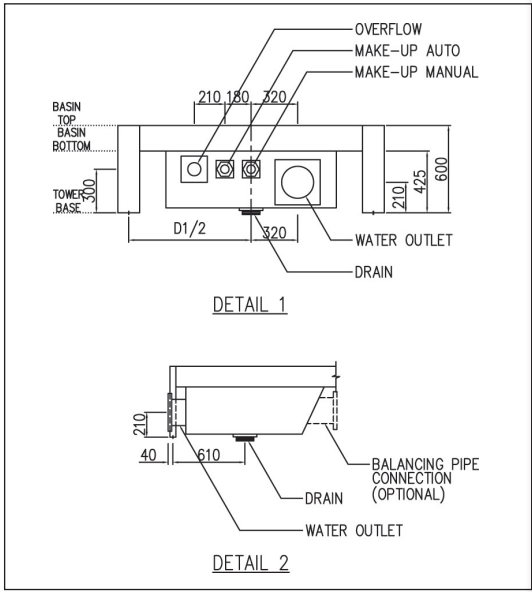
EC-S SERIES RANGE

Tower Model ECS	OVERALL DIMENSION					MOTOR				AXIAL FLOW FAN			
	L	W	H*	h	K*	Rated Output (kW)	Current at 415V (AMP)	Type	Power Source	A	Fan Speed (RPM)	No of blades	Drive System
1010B4	3110	3110	3600	950	900	5.5	11.0	TEFC, Outdoor, 3 phase, Induction Motor, 4 poles	3 ph / 380V / 50hz or 3ph / 415V / 50hz	2440	400	Four (4) to Six (6)	V-Belt and Pulley
1010C4						7.5	13.6				400		
1010D4						11.0	20.1				400		
1010E4						15.0	26.7				400		
1010F4						18.5	33.2				400		
1012B4	3110	3720	4200	950	900	5.5	11.0			2440	400		
1012C4						7.5	13.6				400		
1012D4						11.0	20.1				400		
1012E4						15.0	26.7				400		
1012F4						18.5	33.2				400		
1111B4	3410	3410	4200	950	900	5.5	11.0			2440	400		
1111C4						7.5	13.6				400		
1111D4						11.0	20.1	400					
1111E4						15.0	26.7	400					
1111F4						18.5	33.2	400					
1212C4	3720	3720	4200	950	900	7.5	13.6	2745	380				
1212D4						11.0	20.1		380				
1212E4						15.0	26.7		380				
1212F4						18.5	33.2		380				
1212G4						22.0	39.3		380				

OUTLINE AND FOUNDATION DRAWINGS (SINGLE CELL)



- ECS 1111B4
- ECS 1111C4
- ECS 1111D4
- ECS 1111E4
- ECS 1111F4
- ECS 1212C4
- ECS 1212D4
- ECS 1212E4
- ECS 1212F4
- ECS 1212G4



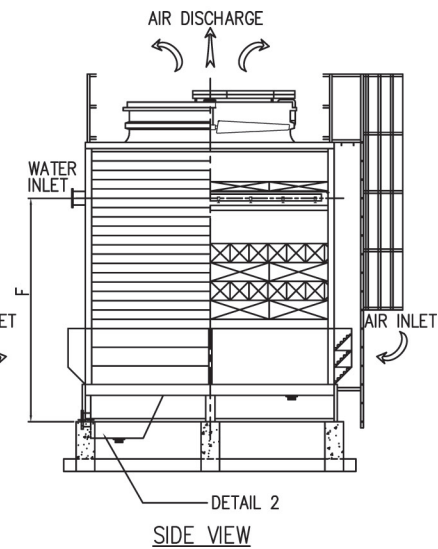
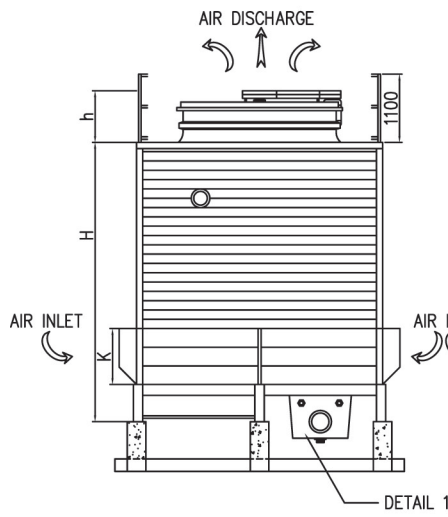
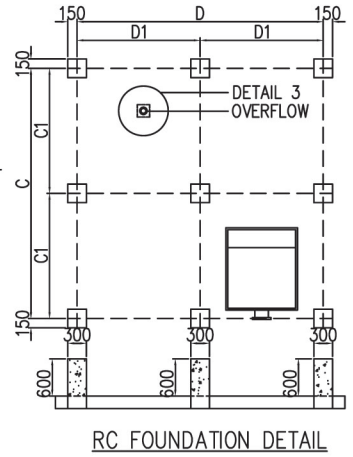
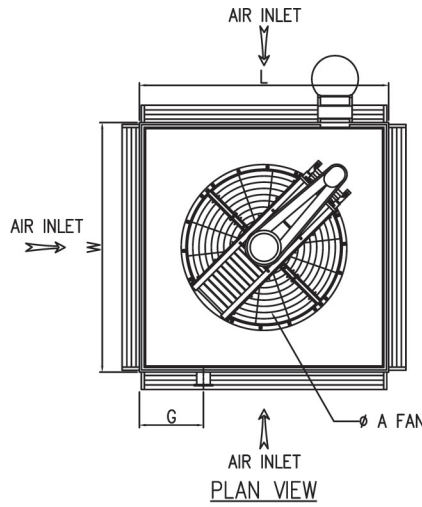
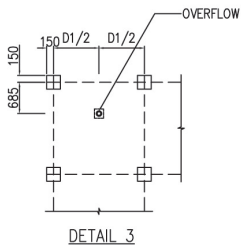
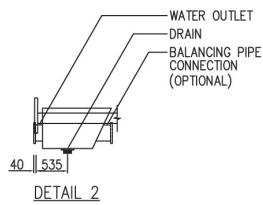
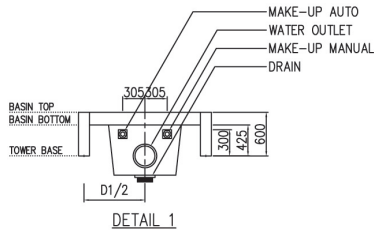
NOTE : ALL DIMENSION IN MM.

EC-S SERIES RANGE

Tower Model ECS	ANCHOR BOLTS DATA				PIPING DATA			PIPING SIZE						WEIGHT (KG)	
	C	D	C1	C2	D1	F*	G	Internal Piping	Water Inlet	Water Outlet	Over-flow	Drain	Make up Auto & Manual	Dry Weight	Oper. Weight
1010B4	3120	3060	1560	-	1530	3000	805	200 x 1	200 x 1	200 x 1	80 x 1	50 x 1	50 x 1	1877	4493
1010C4								200 x 1	200 x 1	200 x 1	80 x 1	50 x 1	50 x 1	1890	4506
1010D4								200 x 1	200 x 1	200 x 1	80 x 1	50 x 1	50 x 1	1933	4549
1010E4								200 x 1	200 x 1	200 x 1	80 x 1	50 x 1	50 x 1	1954	4570
1010F4								250 x 1	250 x 1	250 x 1	80 x 1	50 x 1	50 x 1	1980	5100
1012B4	3730	3060	1865	-	1530	3300	805	200 x 1	200 x 1	200 x 1	80 x 1	50 x 1	50 x 1	1840	4600
1012C4								200 x 1	200 x 1	200 x 1	80 x 1	50 x 1	50 x 1	1890	4750
1012D4								200 x 1	200 x 1	200 x 1	80 x 1	50 x 1	50 x 1	1920	4920
1012E4								200 x 1	200 x 1	200 x 1	80 x 1	50 x 1	50 x 1	1950	5070
1012F4								250 x 1	250 x 1	250 x 1	80 x 1	50 x 1	50 x 1	1983	5103
1111B4	3420	3360	1710	-	1680	3300	880	200 x 1	200 x 1	200 x 1	80 x 1	50 x 1	50 x 1	1875	4455
1111C4								200 x 1	200 x 1	200 x 1	80 x 1	50 x 1	50 x 1	2040	4800
1111D4								200 x 1	200 x 1	200 x 1	80 x 1	50 x 1	50 x 1	2205	5145
1111E4								200 x 1	200 x 1	200 x 1	80 x 1	50 x 1	50 x 1	2370	5490
1111F4								250 x 1	250 x 1	250 x 1	80 x 1	50 x 1	50 x 1	2403	5523
1212C4	3730	3670	1865	-	1835	3300	957	200 x 1	200 x 1	200 x 1	100 x 1	80 x 1	50 x 1	2620	5990
1212D4								200 x 1	200 x 1	200 x 1	100 x 1	80 x 1	50 x 1	2670	6195
1212E4								250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	2700	6250
1212F4								250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	2800	6350
1212G4								250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	2816	6366

OUTLINE AND FOUNDATION DRAWINGS (SINGLE CELL)

ECS 1313C4 ECS 1414B4
 ECS 1313D4 ECS 1414C4
 ECS 1313E4 ECS 1414D4
 ECS 1313F4 ECS 1414E4
 ECS 1313G4 ECS 1414F4
 ECS 1414G4

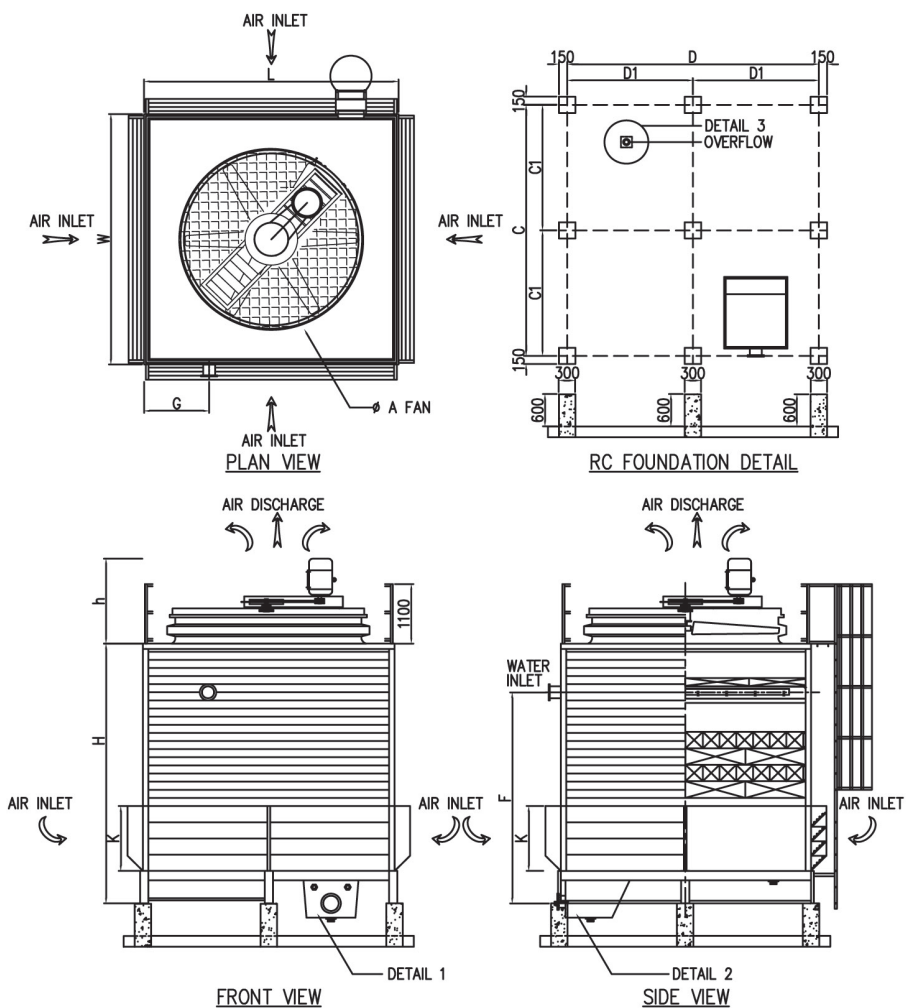


NOTE : ALL DIMENSION IN MM.

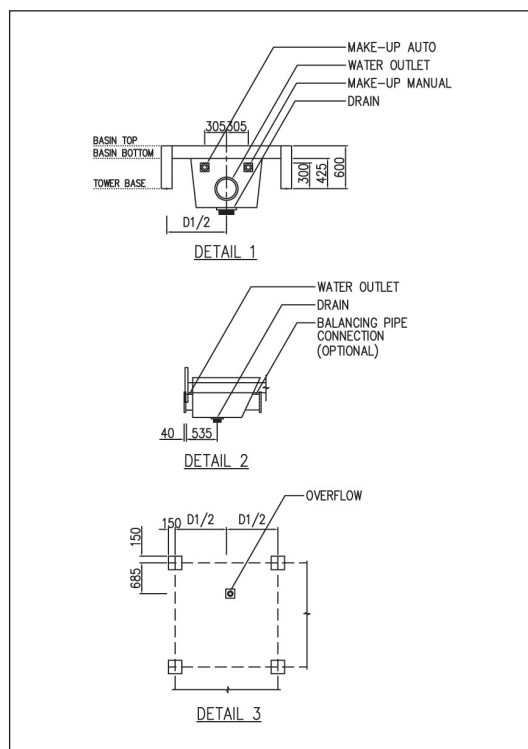
EC-S SERIES RANGE

Tower Model ECS	OVERALL DIMENSION					MOTOR				AXIAL FLOW FAN			
	L	W	H*	h	K*	Rated Output (kW)	Current at 415V (AMP)	Type	Power Source	A	Fan Speed (RPM)	No of blades	Drive System
1313C4	4020	4020	4500	1030	900	7.5	13.6	TEFC, Outdoor, 3 phase, Induction Motor, 4 poles	3 ph / 380 V / 50hz or 3ph / 415V / 50hz	2745	380	Four (4) to Six (6)	V-Belt and Pulley
1313D4						11.0	20.1				380		
1313E4						15.0	26.7				380		
1313F4						18.5	33.2				410		
1313G4						22.0	39.3				410		
1414B4	4330	4330	4500	1030	900	5.5	11.0			3050	300		
1414C4						7.5	13.6				300		
1414D4						11.0	20.1				360		
1414E4						15.0	26.7				360		
1414F4						18.5	33.2				360		
1414G4	22.0	39.3	360										
1515D4	4630	4630	4800	1440	1200	11.0	20.1			3355	325		
1515E4						15.0	26.7				325		
1515F4						18.5	33.2				325		
1515G4						22.0	39.3				325		
1515H4						30.0	51.9	325					

OUTLINE AND FOUNDATION DRAWINGS (SINGLE CELL)



ECS 1515D4
ECS 1515E4
ECS 1515F4
ECS 1515G4
ECS 1515H4



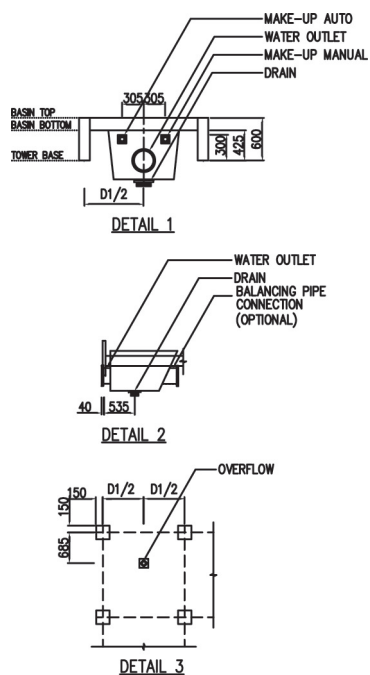
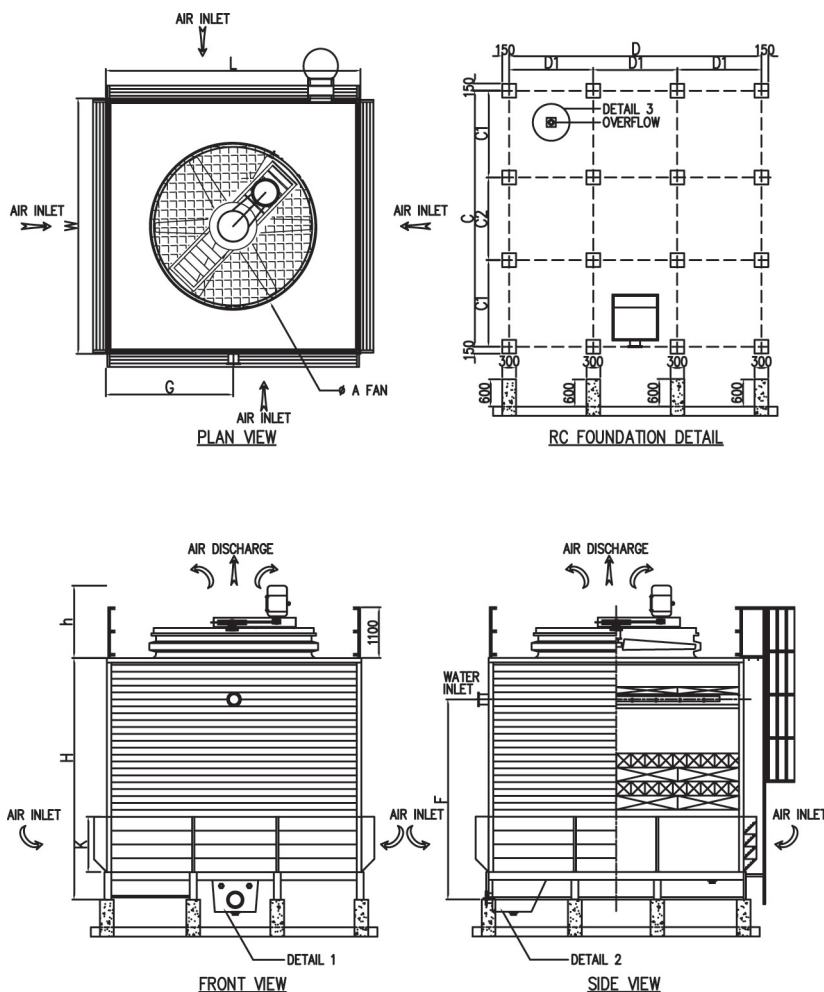
NOTE : ALL DIMENSION IN MM.

EC-S SERIES RANGE

Tower Model ECS	ANCHOR BOLTS DATA				PIPING DATA			PIPING SIZE						WEIGHT (KG)	
	C	D	C1	C2	D1	F*	G	Internal Piping	Water Inlet	Water Outlet	Over-flow	Drain	Make up Auto & Manual	Dry Weight	Oper. Weight
1313C4	4030	3970	2015	-	1985	3600	1033	200 x 1	200 x 1	200 x 1	100 x 1	80 x 1	50 x 1	2750	6600
1313D4								250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	2850	6770
1313E4								250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	3220	7130
1313F4								250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	3310	7230
1313G4								250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	3326	7246
1414B4	4340	4280	2170	-	2140	3600	1110	200 x 1	200 x 1	200 x 1	100 x 1	80 x 1	50 x 1	3520	8070
1414C4								250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	3620	8170
1414D4								250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	3720	8270
1414E4								250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	3820	8370
1414F4								250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	4070	8620
1414G4	250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	4086	8636							
1515D4	4640	4580	2320	-	2290	3900	1185	250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	4360	9630
1515E4								250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	4460	9730
1515F4								250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	4560	9830
1515G4								250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	4910	10590
1515H4								250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	4978	10658

OUTLINE AND FOUNDATION DRAWINGS (SINGLE CELL)

ECS 1616D4 ECS 1717E4
 ECS 1616E4 ECS 1717F4
 ECS 1616G4 ECS 1717G4
 ECS 1616H4 ECS 1717H4
 ECS 1616I4 ECS 1717I4
 ECS 1717J4

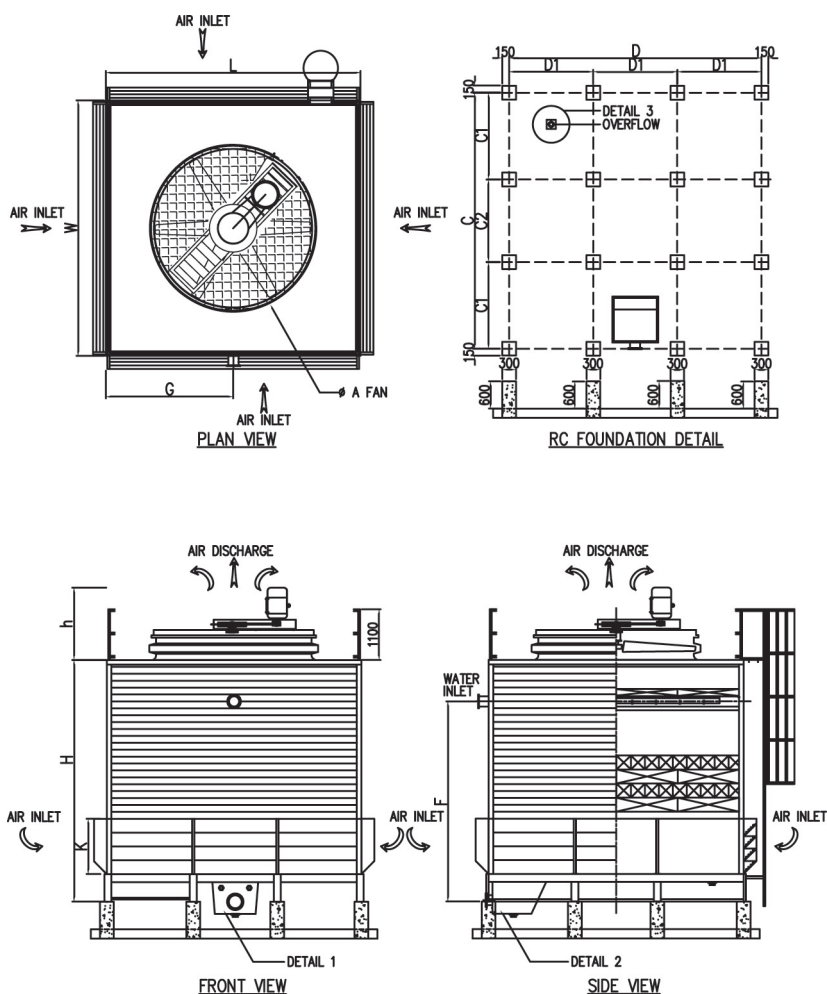


NOTE : ALL DIMENSION IN MM.

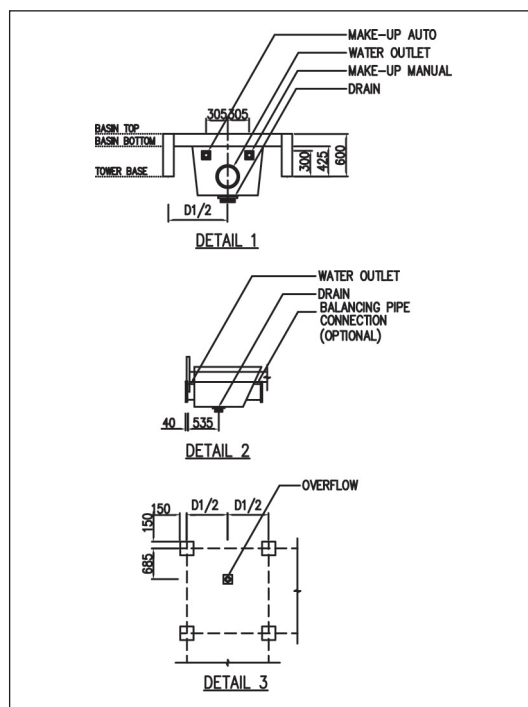
EC-S SERIES RANGE

Tower Model ECS	OVERALL DIMENSION					MOTOR				AXIAL FLOW FAN			
	L	W	H*	h	K*	Rated Output (kW)	Current at 415V (AMP)	Type	Power Source	A	Fan Speed (RPM)	No of blades	Drive System
1616D4	4940	4940	4800	1490	1200	11.0	20.1	TEFC, Outdoor, 3 phase, Induction Motor, 4 poles	3 ph / 380V / 50hz or 3ph / 415V / 50hz	3660	250	Four (4) to Six (6)	V-Belt and Pulley
1616E4						15.0	26.7				250		
1616G4						22.0	39.3				310		
1616H4						30.0	51.9				310		
1616I4						37.0	66.0				310		
1717E4	5240	5240	4800	1545	1200	15.0	26.7			3660	250		
1717F4						18.5	33.2				310		
1717G4						22.0	39.3				310		
1717H4						30.0	51.9				310		
1717I4						37.0	66.0				310		
1717J4	45.0	78.7	310										
1818E4	5550	5550	5250	1545	1200	15.0	26.7			3660	250		
1818F4						18.5	33.2				310		
1818G4						22.0	39.3				310		
1818H4						30.0	51.9				310		
1818I4						37.0	66.0	310					
1818J4						45.0	78.7	310					

OUTLINE AND FOUNDATION DRAWINGS (SINGLE CELL)



ECS 1818E4
ECS 1818F4
ECS 1818G4
ECS 1818H4
ECS 1818I4
ECS 1818J4



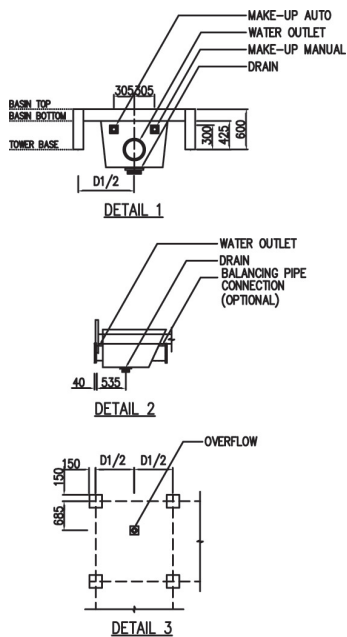
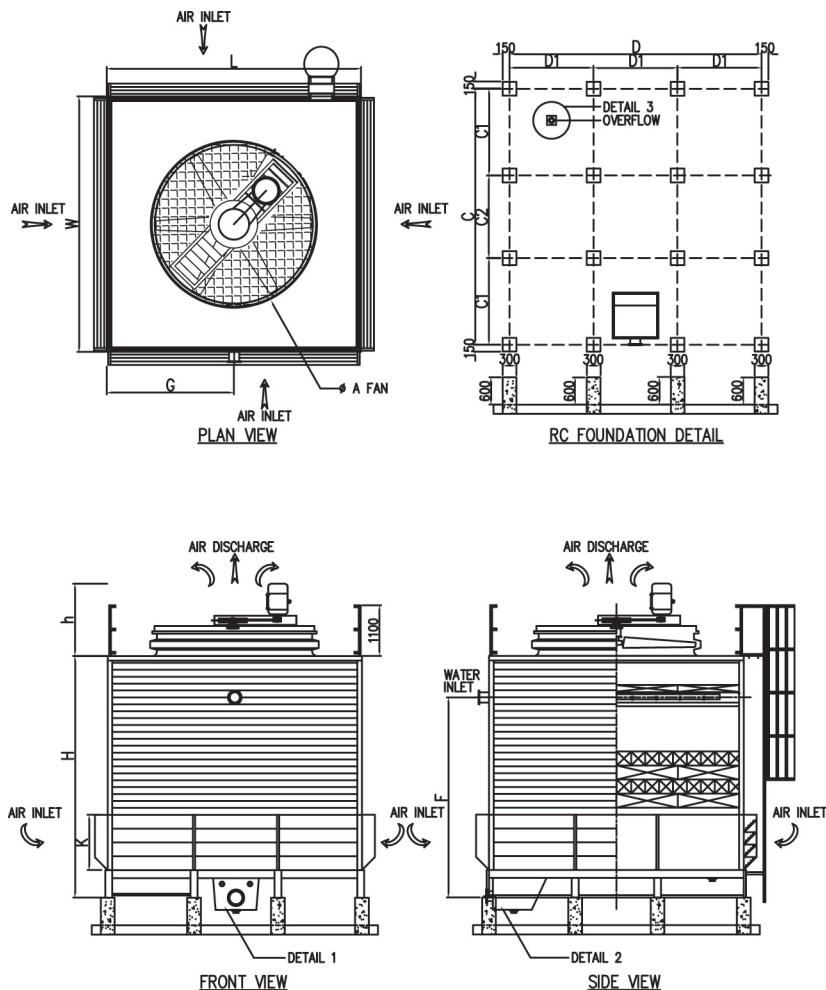
NOTE : ALL DIMENSION IN MM.

EC-S SERIES RANGE

Tower Model ECS	ANCHOR BOLTS DATA				PIPING DATA			PIPING SIZE					WEIGHT (KG)		
	C	D	C1	C2	D1	F*	G	Internal Piping	Water Inlet	Water Outlet	Over-flow	Drain	Make up Auto & Manual	Dry Weight	Oper. Weight
1616D4	4950	4890	1678	1594	1630	3900	2470	250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	5380	11840
1616E4								250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	5480	11940
1616G4								250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	5580	12040
1616H4								300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	5680	12140
1616I4								300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	5734	12194
1717E4	5250	5190	1778	1694	1730	3900	2620	250 x 1	250 x 1	250 x 1	100 x 1	80 x 1	50 x 1	6020	13180
1717F4								300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	6270	13530
1717G4								300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	6520	13880
1717H4								300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	6610	13970
1717I4								300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	6710	14070
1717J4	300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	6737	14097							
1818E4	5560	5500	1882	1796	1833	3900	2775	300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	7100	15360
1818F4								300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	7200	15460
1818G4								300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	7300	15560
1818H4								300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	7400	15660
1818I4								300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	7500	15670
1818J4								300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	7527	15697

OUTLINE AND FOUNDATION DRAWINGS (SINGLE CELL)

ECS 2020F4 ECS 2222G4
 ECS 2020G4 ECS 2222H4
 ECS 2020H4 ECS 2222I4
 ECS 2020I4 ECS 2222J4
 ECS 2020J4 ECS 2222K4
 ECS 2020K4 ECS 2222L4

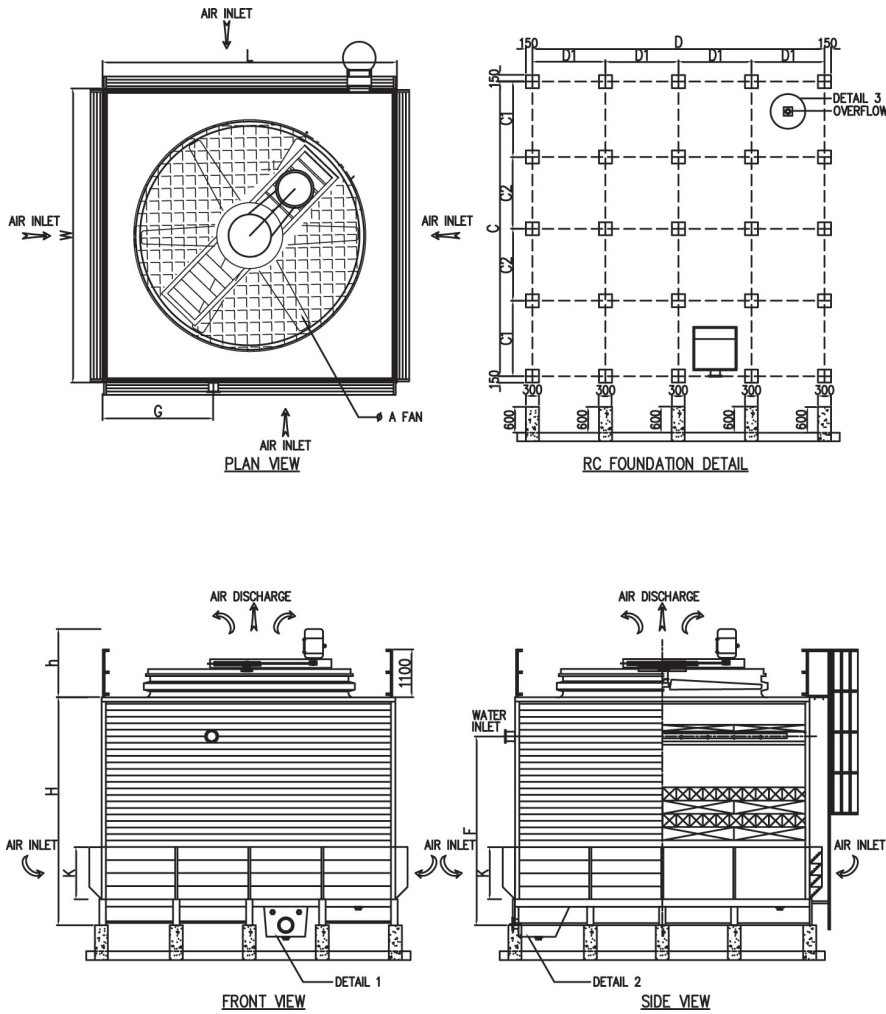


NOTE : ALL DIMENSION IN MM.

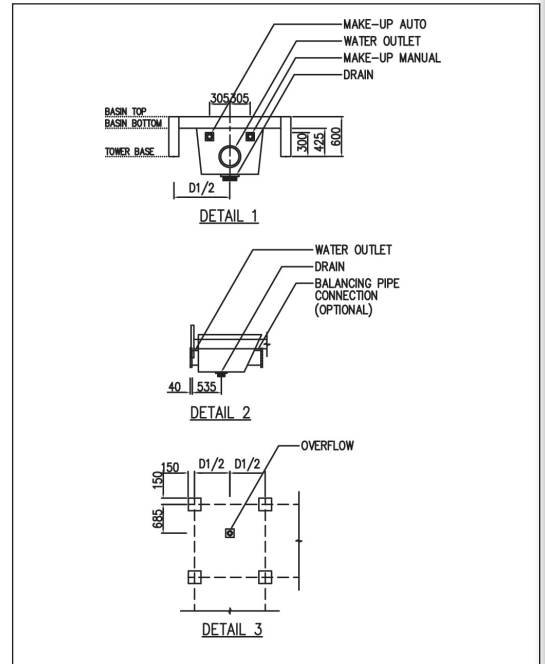
EC-S SERIES RANGE

Tower Model ECS	OVERALL DIMENSION					MOTOR				AXIAL FLOW FAN			
	L	W	H*	h	K*	Rated Output (kW)	Current at 415V (AMP)	Type	Power Source	A	Fan Speed (RPM)	No of blades	Drive System
2020F4	6160	6160	5250	1565	1200	18.5	33.2	TEFC, Outdoor, 3 phase, Induction Motor, 4 poles	3 ph / 380 V / 50hz or 3ph / 415V / 50hz	3660	310	Four (4) to Six (6)	V-Belt and Pulley
2020G4						22.0	39.3				310		
2020H4						30.0	51.9				310		
2020I4						37.0	66.0				310		
2020J4						45.0	78.7				310		
2020K4						55.0	93.5				310		
2222G4	6770	6770	5250	1555	1200	22.0	39.3			4270	230		
2222H4						30.0	51.9				230		
2222I4						37.0	66.0				230		
2222J4						45.0	78.7				230		
2222K4						55.0	93.5				230		
2222L4						75.0	124.0				230		
2424G4	7380	7380	5250	1555	1200	22.0	39.3	4270	230				
2424H4						30.0	51.9		230				
2424I4						37.0	66.0		230				
2424J4						45.0	78.7		230				
2424K4						55.0	93.5		230				
2424L4						75.0	124.0		230				

OUTLINE AND FOUNDATION DRAWINGS (SINGLE CELL)



ECS 2424G4
ECS 2424H4
ECS 2424I4
ECS 2424J4
ECS 2424K4



NOTE : ALL DIMENSION IN MM.

EC-S SERIES RANGE

Tower Model ECS	ANCHOR BOLTS DATA				PIPING DATA			PIPING SIZE						WEIGHT (KG)	
	C	D	C1	C2	D1	F*	G	Internal Piping	Water Inlet	Water Outlet	Over-flow	Drain	Make up Auto & Manual	Dry Weight	Oper. Weight
2020F4	6170	6110	2085	2000	2037	3900	3080	300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	8870	19050
2020G4								300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	10030	21660
2020H4								300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	10120	21750
2020I4								300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	10200	21830
2020J4								300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	10280	21910
2020K4								300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	10395	22025
2222G4	6780	6720	1735	1655	1680	3900	2545	300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	12100	25000
2222H4								300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	12310	26360
2222I4								300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	12500	27200
2222J4								350 x 1	350 x 1	350 x 1	100 x 1	80 x 1	50 x 1	12680	28000
2222K4								350 x 1	350 x 1	350 x 1	100 x 1	80 x 1	50 x 1	12800	29080
2222L4								350 x 1	350 x 1	350 x 1	100 x 1	80 x 1	50 x 1	12884	29164
2424G4	7390	7330	1890	1805	1833	3900	2774	300 x 1	300 x 1	300 x 1	100 x 1	80 x 1	50 x 1	14090	32000
2424H4								350 x 1	350 x 1	350 x 1	100 x 1	80 x 1	50 x 1	14310	32800
2424I4								350 x 1	350 x 1	350 x 1	100 x 1	80 x 1	50 x 1	14550	33960
2424J4								350 x 1	350 x 1	350 x 1	100 x 1	80 x 1	50 x 1	14670	34830
2424K4								350 x 1	350 x 1	350 x 1	100 x 1	80 x 1	50 x 1	14810	35600
2424L4								350 x 1	350 x 1	350 x 1	100 x 1	80 x 1	50 x 1	14894	35684

NOTE : ALL DIMENSION IN MM.

EC-S SERIES RANGE

3 Sides Intake				2 Sides Intake				1 Side Intake			
Tower Model ECS	OVERALL DIMENSION		PIPING DATA	Tower Model ECS	OVERALL DIMENSION		PIPING DATA	Tower Model ECS	OVERALL DIMENSION		PIPING DATA
	H*	K*	F*		H*	K*	F*		H*	K*	F*
0711A3	3600	900	3000	0711A2	3900	1200	3300	0711A1	4500	1800	3900
0711B3				0711B2				0711B1			
0711C3				0711C2				0711C1			
0711D3				0711D2				0711D1			
0711E3				0711E2				0711E1			
0811A3	3900	1200	3300	0811A2	4200	1500	3600	0811A1	4500	1800	3900
0811B3				0811B2				0811B1			
0811C3				0811C2				0811C1			
0811D3				0811D2				0811D1			
0811E3				0811E2				0811E1			
0911A3	3900	1200	3300	0911A2	4200	1500	3600	0911A1	4500	1800	3900
0911B3				0911B2				0911B1			
0911C3				0911C2				0911C1			
0911D3				0911D2				0911D1			
0911E3				0911E2				0911E1			
1010B3	3600	900	3300	1010B2	3900	1200	3300	1010B1	4500	1800	3900
1010C3				1010C2				1010C1			
1010D3				1010D2				1010D1			
1010E3				1010E2				1010E1			
1010F3				1010F2				1010F1			
1012B3	4500	1200	3600	1012B2	4800	1500	3900	1012B1	5100	1800	4200
1012C3				1012C2				1012C1			
1012D3				1012D2				1012D1			
1012E3				1012E2				1012E1			
1012F3				1012F2				1012F1			
1111B3	4200	900	3300	1111B2	4800	1500	3900	1111B1	5400	2100	4500
1111C3				1111C2				1111C1			
1111D3				1111D2				1111D1			
1111E3				1111E2				1111E1			
1111F3				1111F2				1111F1			
1212C3	4200	900	3300	1212C2	4800	1500	3900	1212C1	5400	2100	4500
1212D3				1212D2				1212D1			
1212E3				1212E2				1212E1			
1212F3				1212F2				1212F1			
1212G3				1212G2				1212G1			
1313C3	4500	900	3600	1313C2	5100	1500	4200	1313C1	5700	2100	4800
1313D3				1313D2				1313D1			
1313E3				1313E2				1313E1			
1313F3				1313F2				1313F1			
1313G3				1313G2				1313G1			
1414B3	4500	900	3600	1414B2	5100	1500	4200	1414B1	5700	2100	4800
1414C3				1414C2				1414C1			
1414D3				1414D2				1414D1			
1414E3				1414E2				1414E1			
1414F3				1414F2				1414F1			
1414G3				1414G2				1414G1			

NOTE : ALL DIMENSION IN MM.

EC-S SERIES RANGE

3 Sides Intake				2 Sides Intake				1 Side Intake			
Tower Model ECS	OVERALL DIMENSION		PIPING DATA	Tower Model ECS	OVERALL DIMENSION		PIPING DATA	Tower Model ECS	OVERALL DIMENSION		PIPING DATA
	H*	K*	F*		H*	K*	F*		H*	K*	F*
1515D3	4800	1200	3900	1515D2	5400	1800	4500	1515D1	5700	2100	4800
1515E3											
1515F3											
1515G3											
1515H3											
1515H2											
1616D3	4800	1200	3900	1616D2	5400	1800	4500	1616D1	5700	2100	4800
1616E3											
1616G3											
1616H3											
1616I3											
1616I2											
1717E3	4800	1200	3900	1717E2	5400	1800	4500	1717E1	5700	2100	4800
1717F3											
1717G3											
1717H3											
1717I3											
1717J3											
1818E3	5250	1200	3900	1818E2	5850	1800	4500	1818E1	6150	2100	4800
1818F3											
1818G3											
1818H3											
1818I3											
1818J3											
2020F3	5250	1200	3900	2020F2	5850	1800	4500	2020F1	6150	2100	4800
2020G3											
2020H3											
2020I3											
2020J3											
2020K3											
2222G3	5250	1200	3900	2222G2	5850	1800	4500	2222G1	6450	2400	5100
2222H3											
2222I3											
2222J3											
2222K3											
2222L3											
2424G3	5250	1200	3900	2424G2	5850	1800	4500	2424G1	6450	2400	5100
2424H3											
2424I3											
2424J3											
2424K3											
2424L3											
				2424H2	5850	1800	4500	2424H1	6450	2400	5100
				2424I2							
				2424J2							
				2424K2							
				2424L2							
				2424L1							

EC-S SERIES QUICK SELECTION TABLE

Deg F	HWT	97	100	102	102	105	107	107	110	112	95	98.6	98.6
	CWT	87	90	87	92	95	97	97	100	97	85	89.6	89.6
	WBT	80	80	80	85	85	85	90	90	90	90	78	80.6

Deg C	HWT	36.1	37.8	38.9	38.9	40.6	41.7	41.7	43.3	44.4	35.0	37.0	37.0
	CWT	30.6	32.2	30.6	33.3	35.0	36.1	36.1	37.8	36.1	29.4	32.0	32.0
	WBT	26.7	26.7	26.7	29.4	29.4	29.4	32.2	32.2	32.2	32.2	25.6	27.0

TOWER MODEL ECS	kW	m3/hr											
0711A	4.0	76.8	103.8	61.1	88.3	119.3	141.4	101.7	137.6	81.2	72.7	103.2	89.7
0711B	5.5	85.7	115.9	68.2	98.5	133.2	157.8	113.5	153.5	90.7	81.1	115.1	100.1
0711C	7.5	96.3	130.2	76.6	110.7	149.6	177.2	127.5	172.4	101.9	91.1	129.3	112.5
0711D	11.0	110.8	149.7	88.1	127.3	172.1	203.9	146.7	198.4	117.2	104.8	148.8	129.4
0711E	15.0	123.0	166.3	97.8	141.4	191.1	226.4	162.9	220.3	130.1	116.4	165.2	143.7
0811A	4.0	106.3	143.7	84.5	122.2	165.2	195.7	140.8	190.4	112.5	100.6	142.8	124.2
0811B	5.5	118.5	160.3	94.3	136.2	184.2	218.2	157.0	212.3	125.4	112.2	159.3	138.5
0811C	7.5	131.9	178.3	104.9	151.6	205.0	242.8	174.7	236.2	139.5	124.9	177.2	154.1
0811D	11.0	150.8	203.9	119.9	173.3	234.4	277.6	199.8	270.1	159.6	142.8	202.6	176.2
0811E	15.0	167.5	226.5	133.2	192.5	260.3	308.3	221.9	300.0	177.2	158.6	225.1	195.7
0911A	4.0	113.8	153.9	90.5	130.8	176.9	209.5	150.8	203.8	120.4	107.7	152.9	132.9
0911B	5.5	126.5	171.0	100.6	145.3	196.5	232.8	167.5	226.5	133.8	119.7	169.9	147.7
0911C	7.5	141.2	190.9	112.3	162.3	219.4	259.9	187.1	252.9	149.4	133.7	189.7	164.9
0911D	11.0	160.7	217.3	127.8	184.7	249.7	295.8	212.9	287.8	170.0	152.1	215.9	187.7
0911E	15.0	178.6	241.5	142.1	205.3	277.6	328.8	236.6	319.9	189.0	169.1	240.0	208.6
1012B	5.5	163.4	220.9	130.0	187.8	253.9	300.8	216.5	292.7	172.9	154.7	219.5	190.9
1012C	7.5	181.8	245.7	144.6	208.9	282.4	334.6	240.8	325.5	192.3	172.1	244.2	212.3
1012D	11.0	207.2	280.2	164.8	238.2	322.0	381.4	274.5	371.1	219.2	196.2	278.4	242.0
1012E	15.0	230.9	312.2	183.6	265.4	358.8	425.0	305.9	413.5	244.3	218.6	310.2	269.7
1012F	18.5	248.1	335.4	197.3	285.1	385.5	456.6	328.6	444.3	262.4	234.8	333.3	289.8
1010B	5.5	151.0	204.1	120.1	173.5	234.6	277.9	200.0	270.4	159.7	142.9	202.8	176.3
1010C	7.5	167.0	225.7	132.8	191.9	259.4	307.3	221.2	299.0	176.6	158.0	224.3	195.0
1010D	11.0	188.9	255.4	150.2	217.1	293.5	347.6	250.2	338.3	199.8	178.8	253.7	220.6
1010E	15.0	209.0	282.6	166.2	240.2	324.8	384.7	276.8	374.3	221.1	197.8	280.8	244.1
1010F	18.5	214.9	290.6	170.9	247.0	334.0	395.6	284.7	384.9	227.4	203.4	288.7	251.0
1111B	5.5	157.5	212.9	125.2	181.0	244.7	289.9	208.6	282.1	166.6	149.1	211.6	184.0
1111C	7.5	175.3	236.9	139.4	201.4	272.3	322.6	232.1	313.9	185.4	165.9	235.4	204.7
1111D	11.0	200.1	270.6	159.2	230.0	311.0	368.3	265.1	358.4	211.7	189.4	268.8	233.7
1111E	15.0	221.4	299.4	176.1	254.5	344.1	407.6	293.3	396.6	234.3	209.6	297.5	258.6
1111F	18.5	238.0	321.8	189.3	273.5	369.9	438.1	315.3	426.3	251.8	225.3	319.8	278.0
1212C	7.5	196.6	265.8	156.3	225.9	305.4	361.8	260.4	352.0	207.9	186.1	264.1	229.6
1212D	11.0	227.9	308.2	181.3	262.0	354.2	419.6	301.9	408.2	241.1	215.8	306.2	266.2
1212E	15.0	250.4	338.6	199.2	287.8	389.2	461.0	331.7	448.5	264.9	237.1	336.5	292.5
1212F	18.5	268.2	362.6	213.3	308.3	416.8	493.7	355.3	480.3	283.7	253.9	360.3	313.3
1212G	22	284.2	384.2	226.0	326.6	441.6	523.1	376.4	509.0	300.6	269.0	381.8	331.9
1313C	7.5	226.2	305.8	179.9	259.9	351.5	416.3	299.6	405.1	239.3	214.1	303.8	264.2
1313D	11.0	256.4	346.6	203.9	294.6	398.4	471.9	339.6	459.1	271.2	242.7	344.4	299.4
1313E	15.0	284.2	384.2	226.0	326.6	441.6	523.1	376.4	509.0	300.6	269.0	381.8	331.9
1313F	18.5	305.5	413.0	243.0	351.1	474.7	562.3	404.7	547.2	323.2	289.2	410.4	356.8
1313G	22	323.9	437.9	257.6	372.2	503.3	596.1	429.0	580.0	342.6	306.6	435.1	378.3
1414B	5.5	226.2	305.8	179.9	259.9	351.5	416.3	299.6	405.1	239.3	214.1	303.8	264.2
1414C	7.5	250.4	338.6	199.2	287.8	389.2	461.0	331.7	448.5	264.9	237.1	336.5	292.5
1414D	11.0	285.4	385.8	227.0	328.0	443.5	525.3	378.0	511.1	301.9	270.1	383.4	333.3
1414E	15.0	316.2	427.5	251.4	363.4	491.3	581.9	418.8	566.2	334.5	299.3	424.7	369.3
1414F	18.5	339.3	458.7	269.8	389.9	527.2	624.4	449.4	607.6	358.9	321.1	455.8	396.3
1414G	22	360.0	486.7	286.3	413.7	559.4	662.6	476.8	644.7	380.8	340.8	483.6	420.5

EC-S SERIES QUICK SELECTION TABLE

Deg F	HWT	97	100	102	102	105	107	107	110	112	95	98.6	98.6
	CWT	87	90	87	92	95	97	97	100	97	85	89.6	89.6
	WBT	80	80	80	85	85	85	90	90	90	78	80.6	82.4

Deg C	HWT	36.1	37.8	38.9	38.9	40.6	41.7	41.7	43.3	44.4	35.0	37.0	37.0
	CWT	30.6	32.2	30.6	33.3	35.0	36.1	36.1	37.8	36.1	29.4	32.0	32.0
	WBT	26.7	26.7	26.7	29.4	29.4	29.4	32.2	32.2	32.2	25.6	27.0	28.0

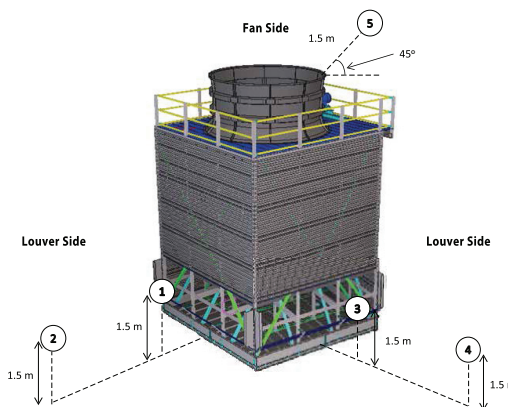
TOWER MODEL ECS	kW	m3/hr											
1515D	11.0	320.3	433.1	254.7	368.1	497.7	589.6	424.3	573.7	338.8	303.2	430.3	374.1
1515E	15.0	354.6	479.5	282.0	407.6	551.1	652.8	469.8	635.2	375.2	335.7	476.4	414.2
1515F	18.5	380.7	514.7	302.8	437.5	591.6	700.7	504.3	681.8	402.7	360.4	511.4	444.7
1515G	22	403.2	545.1	320.7	463.4	626.5	742.1	534.1	722.1	426.5	381.7	541.7	470.9
1515H	30	447.6	605.2	356.0	514.4	695.5	823.9	592.9	801.6	473.5	423.7	601.3	522.8
1616D	11.0	357.0	482.7	283.9	410.3	554.8	657.1	472.9	639.4	377.7	338.0	479.6	417.0
1616E	15.0	396.7	536.3	315.5	455.9	616.4	730.1	525.5	710.5	419.6	375.5	532.9	463.3
1616G	22	449.4	607.6	357.4	516.5	698.3	827.1	595.3	804.8	475.4	425.4	603.7	524.9
1616H	30	498.5	674.0	396.5	573.0	774.7	917.6	660.3	892.8	527.4	471.9	669.7	582.3
1616I	37	534.6	722.8	425.2	614.5	830.8	984.1	708.2	957.5	565.6	506.1	718.3	624.5
1717E	15.0	412.7	557.9	328.2	474.3	641.3	759.6	546.6	739.1	436.6	390.6	554.4	482.0
1717F	18.5	441.7	597.2	351.3	507.6	686.3	813.0	585.1	791.0	467.2	418.1	593.4	515.9
1717G	22	468.3	633.2	372.5	538.3	727.7	862.0	620.4	838.8	495.4	443.3	629.2	547.0
1717H	30	518.6	701.2	412.5	596.1	805.9	954.6	687.0	928.9	548.7	491.0	696.8	605.8
1717I	37	556.5	752.4	442.6	639.6	864.8	1024.4	737.2	996.8	588.8	526.8	747.7	650.1
1717J	45	594.4	803.7	472.7	683.2	923.7	1094.1	787.4	1064.6	628.8	562.7	798.6	694.3
1818E	15.0	434.6	587.5	345.6	499.5	675.3	799.9	575.6	778.3	459.7	411.4	583.8	507.6
1818F	18.5	466.0	630.0	370.6	535.5	724.1	857.7	617.2	834.5	492.9	441.1	626.0	544.2
1818G	22	493.2	666.8	392.2	566.8	766.4	907.8	653.3	883.3	521.7	466.9	662.6	576.1
1818H	30	546.5	738.8	434.6	628.1	849.2	1005.9	723.9	978.7	578.1	517.3	734.2	638.3
1818I	37	587.9	794.9	467.6	675.7	913.6	1082.1	778.8	1053.0	622.0	556.5	789.8	686.7
1818J	45	627.6	848.5	499.1	721.3	975.2	1155.2	831.3	1124.0	663.9	594.1	843.1	733.0
2020F	18.5	547.2	739.8	435.2	628.9	850.3	1007.2	724.8	980.0	578.9	518.0	735.1	639.1
2020G	22	579.6	783.6	460.9	666.1	900.6	1066.8	767.7	1038.0	613.1	548.6	778.6	676.9
2020H	30	644.3	871.1	512.4	740.5	1001.2	1185.9	853.5	1153.9	681.6	609.9	865.6	752.6
2020I	37	690.7	933.8	549.3	793.8	1073.2	1271.2	914.9	1236.9	730.6	653.8	927.9	806.7
2020J	45	737.0	996.4	586.1	847.0	1145.2	1356.5	976.2	1319.9	779.7	697.6	990.1	860.8
2020K	55	788.0	1065.4	626.7	905.7	1224.6	1450.5	1043.9	1411.4	833.7	746.0	1058.7	920.5
2222G	22	645.9	873.3	513.7	742.4	1003.7	1188.9	855.6	1156.9	683.3	611.5	867.8	754.5
2222H	30	717.0	969.4	570.2	824.0	1114.2	1319.7	949.7	1284.1	758.5	678.7	963.2	837.5
2222I	37	769.7	1040.6	612.1	884.6	1196.0	1416.7	1019.5	1378.5	814.2	728.6	1034.0	899.0
2222J	45	822.4	1111.9	654.0	945.2	1277.9	1513.7	1089.3	1472.9	870.0	778.5	1104.8	960.6
2222K	55	879.8	1189.5	699.7	1011.2	1367.2	1619.4	1165.4	1575.7	930.7	832.8	1182.0	1027.6
2222L	75	975.7	1319.2	776.0	1121.4	1516.2	1795.9	1292.5	1747.5	1032.2	923.6	1310.8	1139.7
2424G	22	694.5	939.0	552.3	798.2	1079.2	1278.3	919.9	1243.8	734.7	657.4	933.0	811.2
2424H	30	770.9	1042.2	613.1	886.0	1197.9	1418.9	1021.1	1380.6	815.5	729.7	1035.6	900.4
2424I	37	827.7	1119.1	658.3	951.3	1286.2	1523.5	1096.4	1482.4	875.6	783.5	1112.0	966.8
2424J	45	884.0	1195.1	703.0	1015.9	1373.6	1627.0	1170.9	1583.1	935.1	836.8	1187.5	1032.5
2424K	55	946.7	1280.0	752.9	1088.1	1471.1	1742.5	1254.0	1695.5	1001.5	896.2	1271.9	1105.8
2424L	75	1050.3	1420.0	835.3	1207.1	1632.1	1933.3	1391.3	1881.1	1111.1	994.3	1411.1	1226.8

SOUND LEVEL CHART (SINGLE CELL)

ECS

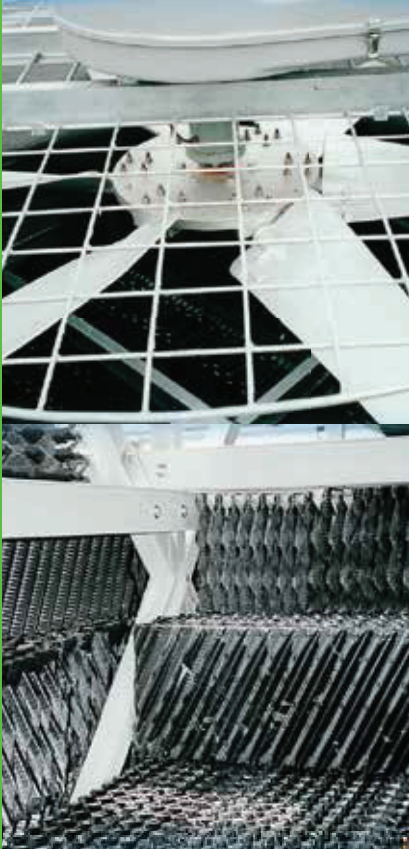
The measuring point at 45 degrees is diagonally above the top edge of the fan stack, opposite of motor driver side.

If fan diameter is less than 1.5m, the measuring distance should be limited to 1.5m standard.



Tower Model ECS	SOUND LEVEL dBAI				
	Louver		Panel		Fan
	2m	10m	2m	10m	Degree @1.5m
Point	1	2	3	4	5
0711A	68	60	68	60	72
0711B	69	61	69	61	74
0711C	70.5	62	70.5	62	75
0711D	72	64.5	72	64.5	76.5
0711E	73.5	65	73.5	65	76.5
0811A	69.5	61.5	69.5	61.5	72
0811B	71	62.5	71	62.5	74
0811C	72	63	72	63	75
0811D	73.5	65	73.5	65	76.5
0811E	74	65	74	65	76.5
0911A	70	62.5	70	62.5	72
0911B	71.5	63	71.5	63	74
0911C	72	63.5	72	63.5	75
0911D	74	65	74	65	76.5
0911E	74.5	66	74.5	66	76.5
1010B	72	63.5	72	63.5	74
1010C	73	64	73	64	75
1010D	74.5	66	74.5	66	76.5
1010E	76	67	76	67	78
1010F	79	69.5	79	69.5	80.5
1012B	72	63.5	72	63.5	74
1012C	73	64	73	64	75
1012D	74.5	66	74.5	66	76.5
1012E	76	67	76	67	78
1012F	79	69.5	79	69.5	80.5
1111B	73	64	73	64	74
1111C	74	65	74	65	75
1111D	75.5	66.5	75.5	66.5	76.5
1111E	76.5	67.5	76.5	67.5	78
1111F	79	69.5	79	69.5	80.5
1212C	74	65	74	65	75
1212D	75.5	66.5	75.5	66.5	76.5
1212E	76.5	67.5	76.5	67.5	78
1212F	79	69.5	79	69.5	80.5
1212G	80	70.5	80	70.5	81.5
1313C	74	65	74	65	75
1313D	75.5	66.5	75.5	66.5	76.5
1313E	76.5	67.5	76.5	67.5	78
1313F	79	69.5	79	69.5	80.5
1313G	80	70.5	80	70.5	81.5
1414B	73	64	73	64	74
1414C	74	65	74	65	75
1414D	75.5	66.5	75.5	66.5	76.5
1414E	78.5	69.5	78.5	69.5	79

Tower Model ECS	SOUND LEVEL dBAI				
	Louver		Panel		Fan
	2m	10m	2m	10m	Degree @1.5m
Point	1	2	3	4	5
1414F	79	69.5	79	69.5	80.5
1414G	81	71.5	81	71.5	82.5
1515D	78.5	69.5	78.5	69.5	78.5
1515E	78.5	69.5	78.5	69.5	79
1515F	80	71	80	71	81
1515G	81.0	72.0	81	72	82.0
1515H	82.0	73.0	82	73.0	82.5
1616D	78.0	69.0	78	69	78.5
1616E	78.5	69.5	78.5	69.5	79.0
1616F	80.0	71.0	80	71	80.5
1616G	80.5	71.0	80.5	71	81.0
1616H	81.0	72.0	81	72	81.5
1616I	82.0	73.0	82	73.0	82.5
1717E	78.5	69.5	78.5	69.5	79.0
1717F	80.0	71.0	80	71	80.5
1717G	81.0	72.0	81	72	81.0
1717H	81.5	72.5	81.5	72.5	82.0
1717I	82.0	73.0	82	73	82.5
1717J	83.5	74.5	83.5	74.5	84.0
1818E	78.5	69.5	78.5	69.5	79.0
1818F	80.0	71.0	80	71	80.5
1818G	81.0	72.0	81	72	81.0
1818H	81.5	72.5	81.5	72.5	82.0
1818I	82.5	73.5	82.5	73.5	82.5
1818J	83.5	74.5	83.5	74.5	84.0
2020F	80.0	71.0	80	71	80.5
2020G	81.0	72.0	81	72	81.0
2020H	82.0	73.0	82	73	82.5
2020I	83.0	74.0	83	74	83.0
2020J	83.5	74.5	83.5	74.5	84.0
2020K	85.5	76.5	85.5	76.5	84
2222G	81.5	73	81.5	73	81
2222H	82.5	73.5	82.5	73.5	82.5
2222I	84	75	84	75	83
2222J	85.5	76.5	85.5	76.5	84
2222K	87	78	87	78	85
2222L	88.5	79	88.5	79	89
2424G	82.5	73.5	82.5	73.5	81
2424H	84	75	84	75	82.5
2424I	85.5	76.5	85.5	76.5	83
2424J	87	78	87	78	84
2424K	88.5	79.5	88.5	79.5	85
2424L	88.5	79	88.5	79	89



1.0 GENERAL

The cooling tower shall be induced-draft vertical discharge type, counterflow, rectangular, film filled, FRP Cooling Tower. It shall be designed with high efficiency drift eliminators to meet current environmental standards and guidelines for microbial control.

2.0 CAPACITY

Cooling Tower shall be capable of providing the thermal performance scheduled.

3.0 PERFORMANCE WARRANTY

The rated capacity shall be certified by the Cooling Tower Institute (CTI). The cooling tower manufacturer shall guarantee that the tower supplied will meet the specified performance conditions when the tower is installed according to plans.

4.0 CONSTRUCTION

The cooling tower main frame structure shall be hot dipped galvanized steel (HDGS). The casing, louver and fan cylinder shall be made of Fiberglass Reinforced Polyester (FRP).

5.0 MECHANICAL EQUIPMENT

- 5.1 Fan(s) shall be propeller type, incorporating heavy duty blades of cast aluminium alloy. Blades should be individually adjustable.
- 5.2 V belts shall be of rubber and pulleys shall be cast aluminium alloy with the grooves of standard dimensions. FRP Belt cover must be provided to protect V belts from moist discharge air.
- 5.3 Motor(s) shall be TEFC, weather proof, squirrel cage, for 3 ph/50Hz/415V power supply and installed outside air stream.
- 5.4 The complete mechanical equipment assembly for each cell shall be supported by a rigid, welded, hot dipped galvanised steel structural support. Vibration limit switches must be installed to shut off the motor if excessive vibration occurs. The switch is located on the motor end of the mechanical equipment support outside the fan cylinder, so as not to be exposed directly to the discharge air stream and for ease of maintenance and access to reset.



6.0 FILLS, LOUVERS AND DRIFT ELIMINATORS

- 6.1 Fill shall be film type, rigid, corrugated PVC sheets that are conducive to cooling water with UV protected and self extinguishing properties. Fill shall be cross-corrugated and the surface of the sheet shall have a suitable micro-structure to improve turbulence and water distribution. Fill sheets shall be bonded at all contact points. Fill shall be of alternate tip configuration to improve water drainage and minimize air pressure drop.
- 6.2 Drift Eliminators shall be assembled in easily removable modules. Drift Eliminator shall be 3 pass sinusoidal-shaped blade type. Guarantee drift losses must not exceed 0.005% of the design water flow rate.

7.0 HOT WATER DISTRIBUTION SYSTEM

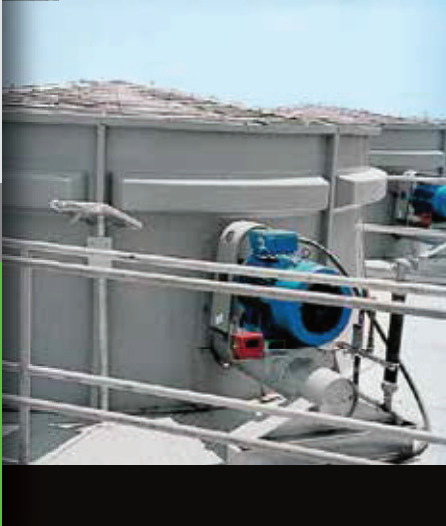
Each cell of the tower shall be equipped with hot water distribution system. Header and lateral pipes shall be PVC. Nozzles shall be non-clogging, capable of passing objects up to 25mm in diameter. The spray must be designed such that the nozzle outlet is the lowest point in the system. The water inlet connection shall be located outside the tower casing. No rotating mechanical sprinkler system is allowed.

8.0 COLD WATER BASIN

The cold water basin shall be of FRP and supported on HDG Steel framework. The basin shall be designed with sufficient water capacity to avoid air entrainment in the outlet during operating conditions. FRP sump(s) shall be provided and equipped with suction strainer, make-up ball valve, overflow and drain. For multiple tower arrangement, equilising pipes between basins shall be provided to maintain the same level of water in each basin.

9.0 ACCESS AND SAFETY

Service and maintenance platform must be constructed at the fan deck level to facilitate easy inspection & maintenance of the fan machinery. Inspection door and caged ladder shall also be provided. Louver panel shall be removable for access to the sump, make-up, overflow and suction strainer. HDG steel fan guard shall be provided over each fan cylinder.



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Member



Truwater Cooling Towers Sdn Bhd (188113-A)

Executive Suite 702, Block B, Kelana Business Centre, No. 97, Jalan SS7/2,
Kelana Jaya, 47301 Petaling Jaya, Selangor, Malaysia

Tel. : +603 7880 8800 Fax : +603 7804 5519

E-mail : Tw.Cooling@truwater.com.my Website : www.truwater.com.my