

# GENIUS<sup>TM</sup>

The Ultimate Cooling Machine

## GD/GDS SERIES COUNTERFLOW COOLING TOWER



MEMBER



• DURABLE • ENERGY & SPACE SAVING

## GD Series Quick Selection Table

The diagrams below shows the common combinations of various cold water, hot water and wet bulb temperature. However, if there is a difference in temperature combination, please contact the company for a selection of the cooling tower by our computer software.

### USGPM cooling capacity at indicated Hot Water, Cold Water and Wet-Bulb Temperatures

Deg F	In	95	95	95	98.6	95	97	98	98.6	97	100	98.6	100	100
	Out	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	In	35	35	35	37	35	36.11	36.67	37	36.11	37.78	37	37.78	37.78
	Out	29.5	29.5	29.5	32	30	30.56	31.11	32	30.56	32.22	32	32.22	32.22
	WB	27	27.5	27.7	27	27.22	27.22	27.78	27.5	27.78	27.78	28	28.33	28.89

Model	HRT	US GPM												
		93	83	79	172	110	119	121	163	106	148	152	139	128
GD 50	50	93	83	79	172	110	119	121	163	106	148	152	139	128
GD 60	60	111	100	95	206	132	143	145	196	127	177	182	167	153
GD 70	70	130	117	111	241	154	167	170	228	148	207	213	194	179
GD 80	80	148	134	126	275	176	190	194	261	169	236	243	222	204
GD 100	100	185	167	158	344	220	238	242	326	211	295	304	278	256
GD 125	125	233	209	198	432	264	300	304	410	264	370	379	344	322
GD 150	150	278	251	236	515	317	357	366	489	317	445	458	414	388
GD 175	175	330	293	277	604	383	419	427	573	374	520	529	480	449
GD 200	200	379	333	317	687	441	476	485	652	427	595	608	551	511
GD 225	225	419	376	356	775	485	537	551	736	476	670	683	621	573
GD 250	250	471	418	396	859	537	595	608	815	529	740	758	692	643
GD 280	280	518	468	443	962	617	666	678	913	592	826	851	777	715
GD 300	300	555	502	475	1031	661	714	731	978	639	890	916	828	775
GD 325	325	601	543	514	1117	716	773	787	1060	687	959	988	902	830
GD 350	350	661	586	554	1203	767	833	855	1145	740	1040	1057	969	899
GD 400	400	762	666	634	1383	881	952	969	1304	850	1189	1216	1106	1022
GD 450	450	837	752	712	1555	969	1070	1101	1471	956	1339	1366	1242	1145
GD 500	500	943	836	792	1718	1101	1189	1216	1630	1062	1485	1520	1383	1304
GD 560	560	1036	936	886	1924	1233	1332	1357	1826	1184	1652	1702	1554	1431
GD 600	600	1110	1004	950	2062	1322	1427	1454	1956	1278	1784	1824	1661	1542
GD 650	650	1203	1086	1028	2233	1432	1546	1575	2119	1374	1918	1976	1804	1661
GD 700	700	1322	1171	1108	2405	1542	1665	1696	2282	1489	2084	2115	1934	1797
GD 750	750	1414	1254	1188	2577	1612	1806	1824	2445	1586	2220	2273	2075	1930
GD 800	800	1520	1332	1268	2749	1762	1903	1938	2608	1700	2379	2432	2211	2044
GD 840	840	1554	1404	1329	2886	1850	1998	2035	2738	1776	2478	2553	2331	2146
GD 900	900	1696	1504	1424	3093	1982	2141	2181	2943	1912	2678	2731	2489	2291
GD 1000	1000	1885	1672	1584	3436	2203	2379	2423	3260	2123	2974	3040	2767	2573

## GDS Series Quick Selection Table

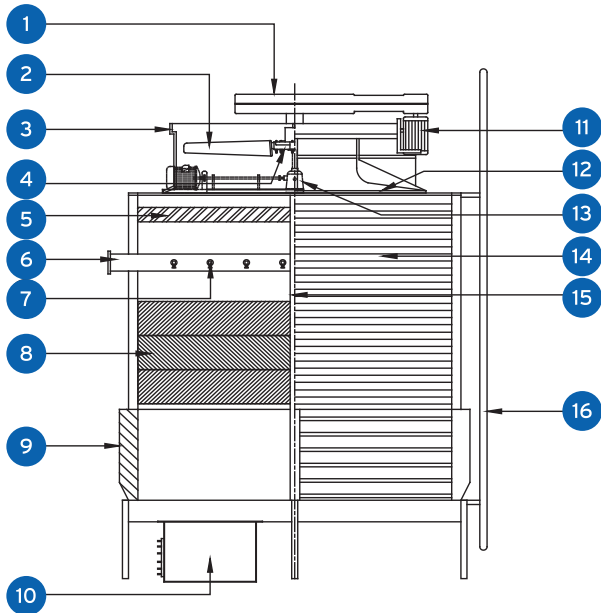
The diagrams below shows the common combinations of various cold water, hot water and wet bulb temperature. However, if there is a difference in temperature combination, please contact the company for a selection of the cooling tower by our computer software.

USGPM cooling capacity at indicated Hot Water, Cold Water and Wet-Bulb Temperatures

Deg F	In	95	95	95	98.6	95	97	98	98.6	97	100	98.6	100	100
	Out	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	In	35	35	35	37	35	36.11	36.67	37	36.11	37.78	37	37.78	37.78
	Out	29.5	29.5	29.5	32	30	30.56	31.11	32	30.56	32.22	32	32.22	32.22
	WB	27	27.5	27.7	27	27.22	27.22	27.78	27.5	27.78	27.78	28	28.33	28.89

Model	HRT	US GPM															
		350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1150	1250
GDS 350-1B	350	661	586	554	1203	767	883	855	1145	740	1040	1057	969	899			
GDS 400-1B	400	762	666	634	1383	881	952	969	1304	850	1189	1216	1106	1022			
GDS 450-1B	450	837	752	712	1555	969	1070	1101	1471	956	1339	1366	1242	1145			
GDS 500-1B	500	943	836	792	1718	1101	1189	1216	1630	1062	1485	1520	1383	1304			
GDS 550-1B	550	1030	920	871	1890	1218	1308	1318	1775	1168	1665	1661	1551	1427			
GDS 600-1B	600	1110	999	951	2062	1322	1427	1454	1956	1278	1784	1824	1661	1542			
GDS 650-1B	650	1203	1086	1028	2233	1432	1546	1575	2119	1374	1918	1976	1804	1661			
GDS 700-1B	700	1322	1171	1108	2405	1542	1665	1696	2282	1489	2084	2115	1934	1797			
GDS 750-1B	750	1414	1254	1188	2577	1612	1806	1824	2445	1586	2220	2273	2075	1930			
GDS 800-1B	800	1520	1332	1268	2749	1762	1903	1938	2608	1700	2379	2432	2211	2044			
GDS 850-1B	850	1628	1421	1346	2921	1878	2018	2038	2753	1815	2599	2581	2423	2188			
GDS 900-1B	900	1696	1504	1424	3093	1982	2141	2181	2943	1912	2678	2731	2489	2291			
GDS 950-1B	950	1813	1590	1505	3264	2093	2261	2318	3075	2038	2890	2881	2687	2476			
GDS 1000-1B	1000	1885	1672	1584	3436	2203	2379	2423	3260	2123	2974	3040	2767	2573			
GDS 1150-1B	1150	2219	1924	1821	3952	2542	2738	2768	3688	2448	3465	3445	3232	2999			
GDS 1250-1B	1250	2355	2090	1980	4295	2685	2975	3040	4075	2645	3700	3790	3460	3215			
GDS 1400-1B	1400	2644	2342	2216	4810	3084	3330	3392	4564	2978	4168	4230	3868	3594			
GDS 1500-1B	1500	2829	2508	2376	5154	3303	3567	3648	4890	3186	4455	4560	4149	3912			



ITEM	DESCRIPTION	MATERIALS / SPECIFICATIONS
1	DRIVE SYSTEM	RIGHT ANGLE / HELICAL TYPE / V-BELT AND PULLEY
2	FAN BLADE	FRP/CAST ALUMINIUM ALLOY
3	FAN STACK	FRP
4	FAN HUB	CAST ALUMINIUM ALLOY
5	DRIFT ELIMINATOR	PVC
6	DISTRIBUTION PIPE	PVC
7	NON CLOG SPRAY NOZZLE	POLYPROPYLENE
8	HIGH PERFORMENT FILM FILL PACK	PVC
9	LOUVER	FRP
10	COLD WATER BASIN SUMP	FRP
11	MOTOR	IE 1,2,3 / 3 PHASE / 4 POLES / 415V / 50hz
12	SAFETY MAINTENANCE SYSTEM	FRP
13	GEAR REDUCER SYSTEM	OPTIONAL
14	CASING	FRP
15	MAIN FRAME STRUCTURE	HOT DEEP GALVANISED STEEL
16	LADDER	HOT DEEP GALVANISED STEEL

## Tower Construction

Tower casing body is made out of F.R.P. (Fiberglass Reinforced Plastics) which is corrosion free, very durable and yet light. Furthermore the body is coated with a special epoxy consist of anti-ultraviolet agent making the tower body more resistant to UV sunlight. The tower main structure frame is using steel which has undergo hot dipped galvanization (HDG) process to prevent rust.

## Cold Water Basin

The cold water basin is constructed from F.R.P. (Fiberglass Reinforced Plastics) which is corrosion free and is supported by HDG steel frame underneath. The cold water basin is also slopping basin to ensure the dirt and sediments trapped inside the basin is being diverted towards the depressed sump in the centre of basin.

The depressed sump will prevent air lock from occurring during the tower operation. The sump is also supplied with suction strainer, makeup water ball valve, overflow and drain connection.

## Optional

There is a high quality special mat above the cold water basin that will absorb most of the water drop noise.

## Mechanical drive system

Fans are of axial type designed to deliver air performance at low noise level. Fan blades material shall be FRP as standard and aluminium alloy as optional. . All fan blades are factory balanced before shipped out. The fan is operating inside a fan stack enclosure to streamline the air entry while maintaining maximum fan efficiency.

The V belt drive system which connects the cast iron pulleys at the motor and fan is contained inside FRP belt cover. This is to ensure that the belts are protected from moist discharge air. Optional aluminium alloy pulleys are available.

The motor is of TEFC weather proof squirrel cage for 3 phase 415 V / 50 Hz power supply.

The motor shall be located outside the discharge air stream below the belt cover to prolong the motor life and ease of maintenance and access.

The fan bearing has a lubrication delivery system from external point outside the fan stack to the fan bearing to allow grease top up to be carried even when the fan is in operation.

## Fills

The film type cellular fill is made of air vacuum forming Ultra Violet (UV) Light resistant PVC sheets which have corrugated surface. The surface has been specially designed to spread the water droplet from hot water basin evenly. The fills are bonded into modular blocks and install in the tower as per design.

The specially designed PVC drift eliminator can reduce the water loss due to carry over within 0.005% with very little air pressure drop.

## Water distribution system

All nozzles are designed to be with special orifice to avoid getting clogged easily. Moreover the nozzles are located inside the tower therefore it is not expose to dirt and environmental pollution.





HITACHI BANGI



SUBANG PARADE



HOLIDAY INN JOHOR



AEON MELAKA



WISMA PERSEKUTUAN NEGERI TERENGGANU



LAMAN PKNS



KOMPLEKS INSTITUT PENYELIDIKAN KESIHATAN BERSEPADU (IPKB), SETIA ALAM



PHILIPS, SINGAPORE

## 1. Evaporating Loss (E) kg/h

The evaporating quantity may be calculated by the equation below:

$$E = \frac{Q}{600} = \frac{(T1-T2) \times WF \times C}{600}$$

Where WE	: Evaporating Quantity	kg/h
Q	: Heat of Cooling	Kcal/h
600	: Latent Heat of Water	Kcal/kg °C
T1	: Intake Water Temperature	°C
T2	: Discharge water Temperature	°C
WF	: Circulating Water Flow	kg/h
C	: Specific Heat of Water	1 Kcal/kg °C

## 2. Drift Loss ( D ) kg/h

The drift loss (D) depend on the type of cooling tower and drift eliminators used. Due to the air flow at a certain speed created by the fan, some water droplets are carried away with the air, this is called carry-over loss.

There are many factors affecting the figure and this generally at a low level, approximately 0.005% of the normal circulating water quantity.

## 3. Blowdown Quantity (B) kg/h

The blow-down (B) can be carried out in any of the following methods

- (1) The drain valve is kept slightly open during the run.
- (2) Maintain the operating water level higher to create slight overflow
- (3) The whole basin water is replenished with fresh water during shut down for cleaning

The required level of blowdown varies depending on the water quantity or the extent of concentrations, but is generally believed to be about 0.2% to 0.4 % for air conditioning applications.

## 4. Replenishing Water Flow rate (R) kg/h

$$R = E + D + B$$

Eg: Evaporation loss : E = 0.98%  
 Drift loss : D = 0.005%  
 Blow-down : B = 0.4%

Therefore, the make-up water required is approximately  
 = 0.98% + 0.005% + 0.4%  
 = 1.385%

Hence, considering safety margin, a make up of 2% of the circulating water flow rate is sufficient.

Item	MODEL (1 Cell)													
	GD50	GD60	GD70	GD80	GD100	GD125	GD150	GD175	GD200	GD225	GD250	GD280	GD300	GD325
Capacity	37													
Cooling Capacity	32													
Water Flow Rate	27													
Hot Water Temp.														
Cold Water Temp.														
Wet Bulb Temp.														
Overall Dimension	1600	1600	1800	1800	2150	2150	2150	2750	2750	2750	3150	3150	3350	3350
Width (W)	1600	1600	1800	1800	2150	2150	2150	2750	2750	2750	3150	3150	3350	3350
Length (L)	3320	3320	3520	3905	3930	4285	4310	4310	4670	4670	4670	5100	5360	5100
Total Height	FRP													
Casing	Hot-Dip Galvanized Steel													
Framework	PVC													
Fill	PVC													
Drift Eliminator	PVC / Polypropylene													
Distribution Pipe / Nozzle	FRP													
Cold Water Basin	FRP													
Fan Assembly	Hub: Cast Aluminium Alloy, Blade: FRP/Cast Aluminium Alloy													
Fan Cylinder	FRP													
Type	Axial Flow													
Fan	1300 x 1	1300 x 1	1300 x 1	1300 x 1	1500 x 1	1700 x 1	1800 x 1	1800 x 1	2000 x 1	2000 x 1	2000 x 1	2180 x 1	2750 x 1	2400 x 1
Diameter x Qty	4													
Number of Blades	960	960	960	620	620	475	475	480	420	420	420	420	380	420
Fan Speed	V-Belt and Pulley													
Drive System	TEFC / 4 poles													
Type	TEAO / 6 poles													
Power Source	415V/3Ph/50Hz													
Rated Output x Qty	1.1 x 1	1.5 x 1	1.5 x 1	2.2 x 1	3 x 1	3.7 x 1	3.7 x 1	3.7 x 1	5.5 x 1	5.5 x 1	5.5 x 1	7.5 x 1	7.5 x 1	11 x 1
Distribution System	PVC distribution pipe and lateral tubes equipped with polypropylene spray nozzles													
Inlet pipe dia.	80 x 1	80 x 1	100 x 1	100 x 1	100 x 1	125 x 1	125 x 1	125 x 1	150 x 1	150 x 1	200 x 1	200 x 1	200 x 1	200 x 1
Outlet pipe dia.	80 x 1	80 x 1	100 x 1	100 x 1	100 x 1	125 x 1	125 x 1	125 x 1	150 x 1	150 x 1	200 x 1	200 x 1	200 x 1	200 x 1
Drain pipe	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1
Overflow pipe	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1
Auto make up	25 x 1	25 x 1	25 x 1	25 x 1	25 x 1	25 x 1	25 x 1	25 x 1	25 x 1	25 x 1	32 x 1	32 x 1	40 x 1	40 x 1
Manual make up	25 x 1	25 x 1	25 x 1	25 x 1	25 x 1	25 x 1	25 x 1	25 x 1	25 x 1	25 x 1	32 x 1	32 x 1	40 x 1	40 x 1
Evaporation loss	0.84													
Drift loss	0.005													
Dry weight	850	870	890	910	1050	1080	1530	1590	1650	1940	2080	2220	2250	2300
Operating weight	1880	1940	1990	2030	2830	2950	3850	3980	4280	4780	4890	5140	5200	5300
Internal head loss	3320	3320	3520	3905	3930	4285	4310	4310	4670	4670	4670	5100	5360	5100
Water storage capacity	1030	1070	1100	1120	1780	1870	2320	2390	2630	2840	2810	2920	2950	3000

The basic design condition of GD series is based on hot water inlet 37°C, cold water outlet : 32°C, Ambient WB: 27°C, 13 l/min/HRT water flow rate  
 Manufacturer reserve the right to change the technical data for improvement of products without prior notice.

Item	MODEL (2 CELLS)										MODEL (3 CELLS)				4 Cells			
	GD350	GD400	GD450	GD500	GD560	GD600	GD650	GD700	GD750	GD800	GD840	GD900	GD1000	GD1120	GD1200	GD1300		
Capacity	37																	
Cooling Capacity HRT	350	400	450	500	560	600	650	700	750	800	840	900	1000	1120	1200	1300		
Water Flow Rate m <sup>3</sup> /hr	191	218	245	272	305	327	354	381	409	436	458	490	545	610	654	708		
Hot Water Temp. °C	32																	
Cold Water Temp. °C	27																	
Wet Bulb Temp. °C	27																	
Width (W) mm	2750	2750	3150	3150	3350	3350	3350	3150	3150	3350	3350	3350	3150	3350	3350	3350		
Length (L) mm	5500	5500	6300	6300	6700	6700	6700	9450	9450	10050	10050	10050	12600	13400	13400	13400		
Total Height mm	4310	4670	4670	4670	5100	5360	5100	4670	4670	4920	5100	5360	4670	5100	5360	5100		
Casing	FRP																	
Framework	Hot-Dip Galvanized Steel																	
Fill	PVC																	
Drift Eliminator	PVC																	
Distribution Pipe / Nozzle	PVC / Polypropylene																	
Cold Water Basin	FRP																	
Fan Assembly	Hub: Cast Aluminium Alloy, Blade: FRP/Cast Aluminium Alloy																	
Fan Cylinder	FRP																	
Type	Axial Flow																	
Diameter x Qty mm	1800 x 2	2000 x 2	2000 x 2	2000 x 2	2180 x 2	2750 x 2	2400 x 2	2000 x 3	2000 x 3	2000 x 3	2180 x 3	2750 x 3	2000 x 4	2180 x 4	2750 x 4	2400 x 4		
Number of Blades	4	4	4	4	4	6	4	4	4	4	4	6	4	4	6	4		
Fan Speed rpm	480	420	420	420	420	380	420	480	480	480	480	380	420	475	380	420		
Drive System	V-Belt and Pulley																	
Type	TEFC / 4 poles																	
Power Source	415V/3Ph/50Hz																	
Rated Output x Qty kw	5.5 x 2	5.5 x 2	5.5 x 2	7.5 x 2	7.5 x 2	7.5 x 2	11 x 2	5.5 x 3	5.5 x 3	7.5 x 3	7.5 x 3	7.5 x 3	7.5 x 4	7.5 x 4	7.5 x 4	11 x 4		
Distribution System	0.84																	
Inlet pipe dia. mm	150 x 2	150 x 2	200 x 2	200 x 2	200 x 2	200 x 2	200 x 2	200 x 3	200 x 3	200 x 3	200 x 3	200 x 3	200 x 4	200 x 4	200 x 4	200 x 4		
Outlet pipe dia. mm	200 x 1	250 x 1	250 x 1	250 x 1	250 x 1	250 x 1	250 x 1	200 x 2	200 x 2	200 x 2	250 x 2	250 x 2	250 x 2	250 x 2	250 x 2	250 x 2		
Drain pipe mm	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2		
Overflow pipe mm	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2		
Auto make up mm	40 x 1	50 x 1	50 x 1	50 x 1	40 x 1	40 x 1	40 x 1	40 x 2	40 x 2	40 x 2	40 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2		
Manual make up mm	40 x 1	50 x 1	50 x 1	50 x 1	40 x 1	40 x 1	40 x 1	40 x 2	40 x 2	40 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2		
Evaporation loss %	0.84																	
Drift loss %	0.005																	
Dry weight kg	3180	3300	3880	4160	4440	4500	4600	6048	6240	6550	6660	6750	8320	8880	9000	9200		
Operating weight kg	7960	8560	9560	9780	10280	10400	10600	12450	14670	15500	15420	15600	19560	20560	20800	21200		
Internal head loss m	4310	4670	4670	4670	5100	5360	5100	4670	4670	4670	5100	5360	4670	5100	5360	5100		
Water storage capacity ℓ	4780	5260	5680	5620	6140	6020	6100	6402	8430	8950	9210	9030	11240	12280	12040	12200		

The basic design condition of GD series is based on hot water inlet 37°C, cold water outlet : 32°C, Ambient WB: 27°C, 13 ℓ/min/HRT water flow rate  
 Manufacturer reserve the right to change the technical data for improvement of products without prior notice.



Item	MODEL (1 Cell)										
	GDS350-1B	GDS400-1B	GDS450-1B	GDS500-1B	GDS550-1B	GDS600-1B	GDS650-1B	GDS700-1B	GDS750-1B		
Capacity											
Cooling Capacity	HRT	350	400	450	500	550	600	650	700	750	
Water Flow Rate	m <sup>3</sup> /h	273	312	351	390	429	468	507	546	585	
Hot Water Temp.	°C	37									
Cold Water Temp.	°C	32									
Wet Bulb Temp.	°C	27									
Overall Dimension	Width (W)	3550	3550	3950	4350	4350	4800	5100	5100	5400	
	Length (L)	3550	3550	3950	4350	4350	4800	5100	5100	5400	
	Total Height	5095	5355	5380	5430	5430	5730	5770	5770	5785	
Material	Casing	FRP									
	Framework	Hot-Dip Galvanized Steel									
	Fill	PVC									
	Drift Eliminator	PVC									
	Distribution Pipe / Nozzle	PVC / Polypropylene									
Fan	Cold Water Basin	FRP									
	Fan Assembly	FRP									
	Fan Cylinder	FRP									
	Type	Axial Flow									
Fan	Diameter x Qty	mm	2400 x 1	2750 x 1	3050 x 1	3050 x 1	3050 x 1	3350 x 1	3350 x 1	3650 x 1	
	Number of Blades		6								
	Fan Speed	rpm	420	395	365	365	365	365	338	338	320
Motor	Drive System	V-Belt and Pulley									
	Type	TEFC / 4 poles									
	Power Source	415V/3Ph/50Hz									
Rated Output x Qty	kw	11 x 1	15 x 1	15 x 1	15 x 1	18.5 x 1	18.5 x 1	18.5 x 1	22 x 1	22 x 1	
		PVC distribution pipe and lateral tubes equipped with polypropylene spray nozzles									
Piping Dimension	Distribution System										
	Inlet pipe dia.	mm	200 x 1	250 x 1	250 x 1	250 x 1	250 x 1	250 x 1	250 x 1	250 x 1	
	Outlet pipe dia.	mm	200 x 1	250 x 1	250 x 1	250 x 1	250 x 1	250 x 1	250 x 1	250 x 1	
	Drain pipe	mm	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	
	Overflow pipe	mm	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	
	Auto make up	mm	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	
Make-up	Manual make up	mm	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	
	Evaporation loss	%	0.84								
Weight	Drift loss	%	0.005								
	Dry weight	kg	2490	2550	2850	3810	3895	4680	5750	5850	6750
Water storage capacity	Operating weight	kg	5780	5840	6590	8650	8690	11800	13100	13480	15300
	Internal head loss	m	5095	5355	5380	5430	5430	5730	5770	5770	5785
	Water storage capacity	ℓ	3290	3290	3740	4840	4795	7120	7350	7630	8550

The basic design condition of GDS series is based on hot water inlet 37°C, cold water outlet : 32°C, Ambient WB: 27°C, 13 ℓ/min/HRT water flow rate  
 Manufacturer reserve the right to change the technical data for improvement of products without prior notice.

Item	MODEL (1 Cell)										
	GDS800-1B	GDS850-1B	GDS900-1B	GDS950-1B	GDS1000-1B	GDS1150-1B	GDS1250-1B	GDS1400-1B	GDS1500-1B	GDS1500-1B	
Capacity	Cooling Capacity HRT	800	850	900	950	1000	1150	1400	1500	1500	
	Water Flow Rate m <sup>3</sup> /h	624	663	702	741	780	905	1170	1170	1170	
	Hot Water Temp. °C	37									
	Cold Water Temp. °C	32									
Overall Dimension	Wet Bulb Temp. °C	27									
	Width (W) mm	5400	5700	5700	5700	6000	6300	6600	7350	7350	
	Length (L) mm	5400	5700	5700	5700	6000	6300	6600	7350	7350	
	Total Height mm	5825	5825	5840	5840	5840	6490	6490	6840	6840	
Material	Casing	FRP									
	Framework	Hot-Dip Galvanized Steel									
	Fill	PVC									
	Drift Eliminator	PVC									
	Distribution Pipe / Nozzle	PVC / Polypropylene									
Fan	Cold Water Basin	FRP									
	Fan Assembly	Hub: Cast Aluminium Alloy, Blade: FRP/Cast Aluminium Alloy									
	Fan Cylinder	FRP									
	Type	Axial Flow									
Fan	Diameter x Qty mm	3650 x 1	3650 x 1	4000 x 1	4000 x 1	4000 x 1	4000 x 1	4250 x 1	4250 x 1	4250 x 1	
	Number of Blades	6									
	Fan Speed rpm	320	320	320	320	320	320	260	260	260	
Motor	Drive System	V-Belt and Pulley									
	Type	TEFC / 4 poles									
	Power Source	415V/3Ph/50Hz									
	Rated Output x Qty kw	30 x 1	30 x 1	30 x 1	37 x 1	37 x 1	37 x 1	45 x 1	45 x 1	55 x 1	
Piping Dimension	Distribution System	PVC distribution pipe and lateral tubes equipped with polypropylene spray nozzles									
	Inlet pipe dia. mm	300 x 1	300 x 1	300 x 1	300 x 1	300 x 1	300 x 1	350 x 1	350 x 1		
	Outlet pipe dia. mm	300 x 1	300 x 1	300 x 1	300 x 1	300 x 1	300 x 1	350 x 1	350 x 1		
	Drain pipe mm	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1		
	Overflow pipe mm	80 x 1	80 x 1	80 x 1	80 x 1	80 x 1	80 x 1	80 x 1	80 x 1		
	Auto make up mm	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1		
Make-up	Manual make up mm	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1	50 x 1		
	Evaporation loss %	0.84									
	Drift loss %	0.005									
	Dry weight kg	6860	7560	7660	7760	8810	10550	11500	14170	14300	
Weight	Operating weight kg	15650	19820	20120	20350	21500	24600	25900	30300		
	Internal head loss m	5825	5825	5840	5840	5840	6490	6490	6840		
	Water storage capacity ℓ	8790	12260	12460	12590	12690	14050	14400	16130		

The basic design condition of GDS series is based on hot water inlet 37°C, cold water outlet : 32°C, Ambient WB: 27°C, 13 ℓ/min/HRT water flow rate  
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Item	MODEL (2 Cells)										
	GDS700-2B	GDS800-2B	GDS900-2B	GDS1000-2B	GDS1100-2B	GDS1200-2B	GDS1300-2B	GDS1400-2B	GDS1500-2B		
Capacity	Cooling Capacity HRT	700	800	900	1000	1100	1200	1300	1400	1500	
	Water Flow Rate m <sup>3</sup> /h	546	624	702	780	858	936	1014	1092	1170	
	Hot Water Temp. °C	37									
Overall Dimension	Hot Water Temp. °C	32									
	Wet Bulb Temp. °C	27									
	Width (W) mm	3550	3550	3950	4350	4350	4800	5100	5100	5400	
	Length (L) mm	7100	7100	7900	8700	8700	9600	10,200	10,200	10,800	
	Total Height mm	5095	5355	5380	5430	5430	5730	5770	5770	5785	
Material	Casing	FRP									
	Framework	Hot-Dip Galvanized Steel									
	Fill	PVC									
	Drift Eliminator	PVC									
	Distribution Pipe / Nozzle	PVC / Polypropylene									
	Cold Water Basin	FRP									
Fan	Fan Assembly	Hub: Cast Aluminium Alloy, Blade: FRP/Cast Aluminium Alloy									
	Fan Cylinder	FRP									
	Type	Axial Flow									
	Diameter x Qty mm	2400 x 2	2750 x 2	3050 x 2	3050 x 2	3050 x 2	3050 x 2	3350 x 2	3350 x 2	3350 x 2	3650 x 2
Motor	Number of Blades	6									
	Fan Speed rpm	420	395	365	365	365	365	338	338	320	
	Drive System	V-Belt and Pulley									
	Type	TEFC / 4 poles									
Piping Dimension	Power Source	415V/3Ph/50Hz									
	Rated Output x Qty kw	11 x 2	15 x 2	15 x 2	15 x 2	18.5 x 2	18.5 x 2	18.5 x 2	22 x 2	22 x 2	22 x 2
	Distribution System										
	PVC distribution pipe and lateral tubes equipped with polypropylene spray nozzles										
	Inlet pipe dia. mm	200 x 2	250 x 2	250 x 2	250 x 2	250 x 2	250 x 2	250 x 2	250 x 2	250 x 2	250 x 2
	Outlet pipe dia. mm	200 x 2	250 x 2	250 x 2	250 x 2	250 x 2	250 x 2	250 x 2	250 x 2	250 x 2	250 x 2
	Drain pipe mm	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2
	Overflow pipe mm	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2
	Auto make up mm	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2
	Manual make up mm	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2
Make-up	Evaporation loss %	0.84									
	Drift loss %	0.005									
Weight	Dry weight kg	4980	5100	5700	7620	7790	9360	11500	11700	13500	
	Operating weight kg	11560	11680	13180	17300	17380	23600	26200	26960	30600	
	Internal head loss m	5095	5355	5380	5430	5430	5730	5770	5770	5785	
Water storage capacity ℓ	6580	6580	7480	9680	9590	14240	14700	15260	17100		

The basic design condition of GDS series is based on hot water inlet 37°C, cold water outlet : 32°C, Ambient WB: 27°C, 13 ℓ/min/HRT water flow rate  
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Item	MODEL (2 Cells)									
	GDS1600-2B	GDS1700-2B	GDS1800-2B	GDS1900-2B	GDS2000-2B	GDS2300-2B	GDS2500-2B	GDS2800-2B	GDS3000-2B	GDS3000-2B
Capacity	1600	1700	1800	1900	2000	2300	2500	2800	3000	3000
Cooling Capacity	1248	1326	1404	1482	1560	1810	1950	2340	2340	2340
Water Flow Rate										
Hot Water Temp.	37									
Cold Water Temp.	32									
Wet Bulb Temp.	27									
Overall Dimension	5400	5700	5700	5700	6000	6300	6600	7350	7350	7350
Width (W)	10,800	11,400	11,400	11,400	12,000	12,600	13,200	14,700	14,700	14,700
Length (L)	5825	5825	5840	5840	5840	6490	6490	6840	6840	6840
Total Height	FRP									
Casing	FRP									
Framework	Hot-Dip Galvanized Steel									
Fill	PVC									
Drift Eliminator	PVC									
Distribution Pipe / Nozzle	PVC / Polypropylene									
Cold Water Basin	FRP									
Fan Assembly	Hub: Cast Aluminium Alloy, Blade: FRP/Cast Aluminium Alloy									
Fan Cylinder	FRP									
Type	Axial Flow									
Diameter x Qty	3650 x 2	4000 x 2	4000 x 2	4000 x 2	4000 x 2	4000 x 2	4250 x 2	4250 x 2	4250 x 2	4250 x 2
Number of Blades	6									
Fan Speed	320	320	320	320	320	320	260	260	260	260
Drive System	V-Belt and Pulley									
Type	TEFC / 4 poles									
Power Source	415V/3Ph/50Hz									
Rated Output x Qty	30 x 2	30 x 2	30 x 2	37 x 2	37 x 2	45 x 2	45 x 2	45 x 2	45 x 2	55 x 2
Distribution System	PVC distribution pipe and lateral tubes equipped with polypropylene spray nozzles									
Inlet pipe dia.	300 x 2	300 x 2	300 x 2	300 x 2	300 x 2	300 x 2	350 x 2	350 x 2	350 x 2	350 x 2
Outlet pipe dia.	300 x 2	300 x 2	300 x 2	300 x 2	300 x 2	300 x 2	350 x 2	350 x 2	350 x 2	350 x 2
Drain pipe	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2
Overflow pipe	80 x 2	80 x 2	80 x 2	80 x 2	80 x 2	80 x 2	80 x 2	80 x 2	80 x 2	80 x 2
Auto make up	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2
Manual make up	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2	50 x 2
Evaporation loss	0.84									
Drift loss	0.005									
Dry weight	13720	15120	15320	15520	17620	21100	23000	28340	28600	28600
Operating weight	31300	39640	40240	40700	43000	49200	51800	60600	61160	61160
Internal head loss	5825	5825	5840	5840	5840	6490	6490	6840	6840	6840
Water storage capacity	17580	24520	24920	25180	25380	28100	28800	32260	32560	32560

The basic design condition of GDS series is based on hot water inlet 37°C, cold water outlet : 32°C, Ambient WB: 27°C, 13 l/min/HR T water flow rate  
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Item	MODEL (3 Cells)										
	GDS1050-3B	GDS1200-3B	GDS1350-3B	GDS1500-3B	GDS1650-3B	GDS1800-3B	GDS1950-3B	GDS2100-3B	GDS2250-3B		
Capacity	Cooling Capacity HRT	1050	1200	1350	1500	1650	1800	1950	2100	2250	
	Water Flow Rate m <sup>3</sup> /h	819	936	1053	1170	1287	1404	1521	1638	1755	
	Hot Water Temp. °C	37									
	Cold Water Temp. °C	32									
Overall Dimension	Wet Bulb Temp. °C	27									
	Width (W) mm	3550	3550	3950	4350	4350	4800	5100	5100	5400	
	Length (L) mm	10,650	10,650	11,850	13,050	13,050	14,400	15,300	15,300	16,200	
	Total Height mm	5095	5355	5380	5430	5430	5730	5770	5770	5785	
Material	Casing	FRP									
	Framework	Hot-Dip Galvanized Steel									
	Fill	PVC									
	Drift Eliminator	PVC									
Distribution Pipe / Nozzle	Distribution Pipe / Nozzle	PVC / Polypropylene									
	Cold Water Basin	FRP									
	Fan Assembly	FRP									
	Fan Cylinder	FRP									
Fan	Type	Axial Flow									
	Diameter x Qty mm	2400 x 3	2750 x 3	3050 x 3	3050 x 3	3050 x 3	3050 x 3	3350 x 3	3350 x 3	3650 x 3	
	Number of Blades	6									
	Fan Speed rpm	420	395	365	365	365	365	338	338	320	
Motor	Drive System	V-Belt and Pulley									
	Type	TEFC / 4 poles									
	Power Source	415V/3Ph/50Hz									
	Rated Output x Qty kw	11 x 3	15 x 3	15 x 3	15 x 3	15 x 3	18.5 x 3	18.5 x 3	18.5 x 3	22 x 3	
Piping Dimension	Distribution System	PVC distribution pipe and lateral tubes equipped with polypropylene spray nozzles									
	Inlet pipe dia. mm	200 x 3	250 x 3	250 x 3	250 x 3	250 x 3	250 x 3	250 x 3	250 x 3	250 x 3	
	Outlet pipe dia. mm	200 x 3	250 x 3	250 x 3	250 x 3	250 x 3	250 x 3	250 x 3	250 x 3	250 x 3	
	Drain pipe mm	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	
	Overflow pipe mm	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	
	Auto make up mm	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	
	Manual make up mm	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	
	Evaporation loss %	0.84									
	Drift loss %	0.005									
	Weight	Dry weight kg	7470	7650	8550	11430	11685	14040	17250	17550	20250
Operating weight kg		17340	17520	19770	25950	26070	35400	39300	40440	45900	
Internal head loss m		5095	5355	5380	5430	5430	5730	5770	5770	5785	
Water storage capacity ℓ	9870	9870	11220	14520	14385	21360	22050	22890	25650		

The basic design condition of GDS series is based on hot water inlet 37°C, cold water outlet : 32°C, Ambient WB: 27°C, 13 ℓ/min/HRT water flow rate  
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Item	MODEL (3 Cells)									
	GDS2400-3B	GDS2550-3B	GDS2700-3B	GDS2850-3B	GDS3000-3B	GDS3450-3B	GDS3750-3B	GDS4200-3B	GDS4500-3B	
Capacity										
Cooling Capacity	2400	2550	2700	2850	3000	3450	3750	4200	4500	
Water Flow Rate	1872	1989	2106	2223	2340	2715	2925	3510	4095	
Hot Water Temp.	37									
Cold Water Temp.	32									
Wet Bulb Temp.	27									
Overall Dimension										
Width (W)	5400	5700	5700	5700	6000	6300	6600	7350	7350	
Length (L)	16,200	17,100	17,100	17,100	18,000	18,900	19,800	22,050	22050	
Total Height	5825	5825	5840	5840	5840	6490	6490	6840	6840	
Casing	FRP									
Framework	Hot-Dip Galvanized Steel									
Fill	PVC									
Drift Eliminator	PVC									
Distribution Pipe / Nozzle	PVC / Polypropylene									
Cold Water Basin	FRP									
Fan Assembly	Hub: Cast Aluminium Alloy, Blade: FRP/Cast Aluminium Alloy									
Fan Cylinder	FRP									
Type	Axial Flow									
Diameter x Qty	3650 x 3	3650 x 3	4000 x 3	4000 x 3	4000 x 3	4000 x 3	4250 x 3	4250 x 3	4250 x 3	
Number of Blades	6									
Fan Speed	320	320	320	320	320	320	260	260	260	
Drive System	V-Belt and Pulley									
Type	TEFC / 4 poles									
Power Source	415V/3Ph/50Hz									
Rated Output x Qty	30 x 3	30 x 3	30 x 3	37 x 3	37 x 3	45 x 3	45 x 3	45 x 3	55 x 3	
Distribution System	PVC distribution pipe and lateral tubes equipped with polypropylene spray nozzles									
Inlet pipe dia.	300 x 3	300 x 3	300 x 3	300 x 3	300 x 3	300 x 3	350 x 3	350 x 3	350 x 3	
Outlet pipe dia.	300 x 3	300 x 3	300 x 3	300 x 3	300 x 3	300 x 3	350 x 3	350 x 3	350 x 3	
Drain pipe	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	
Overflow pipe	80 x 3	80 x 3	80 x 3	80 x 3	80 x 3	80 x 3	80 x 3	80 x 3	80 x 3	
Auto make up	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	
Manual make up	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	50 x 3	
Evaporation loss	0.84									
Drift loss	0.005									
Weight										
Dry weight	20580	22680	22980	23280	26430	31650	34500	42510	42900	
Operating weight	46950	59460	60360	61050	64500	73800	77700	90900	91740	
Internal head loss	5825	5825	5840	5840	5840	6490	6490	6840	6840	
Water storage capacity	26370	36780	37380	37770	38070	42150	43200	48390	48840	

The basic design condition of GDS series is based on hot water inlet 37°C, cold water outlet : 32°C, Ambient WB: 27°C, 13 l/min/HRT water flow rate  
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Item	MODEL (4 Cells)										
	GDS1400-4B	GDS1600-4B	GDS1800-4B	GDS2000-4B	GDS2200-4B	GDS2400-4B	GDS2600-4B	GDS2800-4B	GDS3000-4B		
Capacity	Cooling Capacity HRT	1400	1600	1800	2000	2200	2400	2600	2800	3000	
	Water Flow Rate m <sup>3</sup> /h	1092	1248	1404	1560	1716	1872	2028	2184	2340	
	Hot Water Temp. °C	37									
	Cold Water Temp. °C	32									
Overall Dimension	Wet Bulb Temp. °C	27									
	Width (W) mm	3550	3550	3950	4350	4350	4800	5100	5100	5400	
	Length (L) mm	14,200	14,200	15,800	17,400	17,400	19,200	20,400	20,400	21,600	
	Total Height mm	5095	5355	5380	5430	5430	5730	5770	5770	5785	
Material	Casing	FRP									
	Framework	Hot-Dip Galvanized Steel									
	Fill	PVC									
	Drift Eliminator	PVC									
	Distribution Pipe / Nozzle	PVC / Polypropylene									
	Cold Water Basin	FRP									
Fan	Fan Assembly	Hub: Cast Aluminium Alloy, Blade: FRP/Cast Aluminium Alloy									
	Fan Cylinder	FRP									
	Type	Axial Flow									
	Diameter x Qty mm	2400 x 4	2750 x 4	3050 x 4	3050 x 4	3050 x 4	3050 x 4	3350 x 4	3350 x 4	3350 x 4	3650 x 4
Motor	Number of Blades	6									
	Fan Speed rpm	420	395	365	365	365	365	338	338	320	
	Drive System	V-Belt and Pulley									
	Type	TEFC / 4 poles									
Piping Dimension	Power Source	415V/3Ph/50Hz									
	Rated Output x Qty kw	11 x 4	15 x 4	15 x 4	15 x 4	18.5 x 4	18.5 x 4	18.5 x 4	22 x 4	22 x 4	
	Distribution System	PVC distribution pipe and lateral tubes equipped with polypropylene spray nozzles									
	Inlet pipe dia. mm	200 x 4	250 x 4	250 x 4	250 x 4	250 x 4	250 x 4	250 x 4	250 x 4	250 x 4	
Make-up	Outlet pipe dia. mm	200 x 4	250 x 4	250 x 4	250 x 4	250 x 4	250 x 4	250 x 4	250 x 4		
	Drain pipe mm	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4		
	Overflow pipe mm	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4		
	Auto make up mm	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4		
Weight	Manual make up mm	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4		
	Evaporation loss %	0.84									
	Drift loss %	0.005									
	Dry weight kg	9960	10200	11400	15240	15580	18720	23000	23400	27000	
Water storage capacity	Operating weight kg	23120	23360	26360	34600	34760	47200	52400	53920		
	Internal head loss m	5095	4760	4760	5060	5060	5060	5060	5785		
	Water storage capacity ℓ	13160	18005	20980	29170	29330	41470	46630	48150		

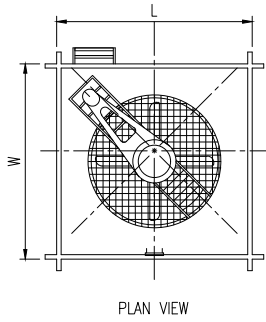
The basic design condition of GDS series is based on hot water inlet 37°C, cold water outlet : 32°C, Ambient WB: 27°C, 13 ℓ/min/HRT water flow rate  
 Manufacturer reserve the right to change the technical data for improvement of products without prior notice.

Item	MODEL (4 Cells)										
	GDS3200-4B	GDS3400-4B	GDS3600-4B	GDS3800-4B	GDS4000-4B	GDS4600-4B	GDS5000-4B	GDS5600-4B	GDS6000-4B		
Capacity	Cooling Capacity HRT	3200	3400	3600	3800	4000	4600	5000	5600	6000	
	Water Flow Rate m <sup>3</sup> /h	2496	2652	2808	2964	3120	3620	3900	4680	5460	
	Hot Water Temp. °C	37									
Overall Dimension	Cold Water Temp. °C	32									
	Wet Bulb Temp. °C	27									
	Width (W) mm	5400	5700	5700	5700	6000	6300	6600	7350	7350	
Material	Length (L) mm	21,600	22,800	22,800	22,800	24,000	25,200	26,400	29,400	29,400	
	Total Height mm	5825	5825	5840	5840	5840	6490	6490	6840	6840	
	Casing	FRP									
Fan	Framework	Hot-Dip Galvanized Steel									
	Fill	PVC									
	Drift Eliminator	PVC									
	Distribution Pipe / Nozzle	PVC / Polypropylene									
	Cold Water Basin	FRP									
Motor	Fan Assembly	FRP									
	Fan Cylinder	FRP									
	Type	Axial Flow									
Fan	Diameter x Qty mm	3650 x 4	4000 x 4	4000 x 4	4000 x 4	4000 x 4	4000 x 4	4250 x 4	4250 x 4	4250 x 4	
	Number of Blades	6									
	Fan Speed rpm	320	320	320	320	320	320	260	260	260	
Motor	Drive System	V-Belt and Pulley									
	Type	TEFC / 4 poles									
	Power Source	415V/3Ph/50Hz									
Piping Dimension	Rated Output x Qty kw	30 x 4	30 x 4	30 x 4	37 x 4	37 x 4	45 x 4	45 x 4	45 x 4	55 x 4	
	Distribution System	PVC distribution pipe and lateral tubes equipped with polypropylene spray nozzles									
	Inlet pipe dia. mm	300 x 4	300 x 4	300 x 4	300 x 4	300 x 4	300 x 4	300 x 4	350 x 4	350 x 4	
	Outlet pipe dia. mm	300 x 4	300 x 4	300 x 4	300 x 4	300 x 4	300 x 4	350 x 4	350 x 4	350 x 4	
	Drain pipe mm	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	
	Overflow pipe mm	80 x 4	80 x 4	80 x 4	80 x 4	80 x 4	80 x 4	80 x 4	80 x 4	80 x 4	
	Auto make up mm	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	
	Manual make up mm	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	50 x 4	
	Evaporation loss %	0.84									
	Drift loss %	0.005									
Weight	Dry weight kg	27440	30240	30640	31040	35240	42200	46000	56680	57200	
	Operating weight kg	62600	79280	80480	81400	86000	98400	103600	121200	122320	
	Internal head loss m	5825	5825	5840	5840	5840	6490	6490	6840	6840	
Water storage capacity ℓ	35160	49040	49840	50360	50760	56200	57600	64520	65120		

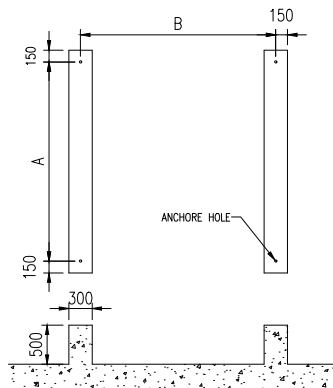
The basic design condition of GDS series is based on hot water inlet 37°C, cold water outlet : 32°C, Ambient WB: 27°C, 13 ℓ/min/HRT water flow rate  
 Manufacturer reserve the right to change the technical data for improvement of products without prior notice.



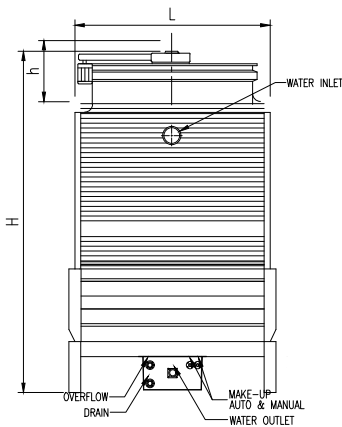
## GD - ONE CELL



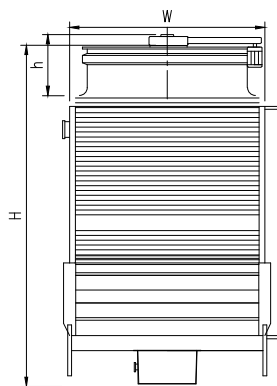
PLAN VIEW



CONCRETE FOUNDATION  
FOR GD50 TO GD125



FRONT VIEW

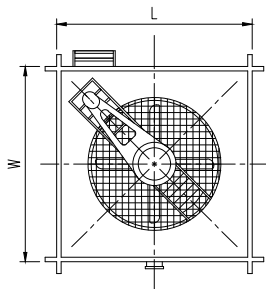


SIDE VIEW

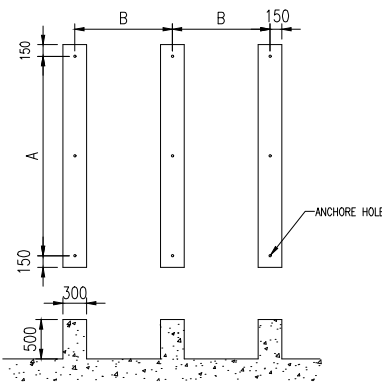
NOTE: ALL DIMENSION IN MM

MODEL	TOWER DIMENSION				FOUNDATION DETAILS		
	L	W	H	h	A	B	C
GD 50	1600	1600	3320	300	1650	1600	-
GD 60	1600	1600	3320	590	1650	1600	-
GD 70	1800	1800	3520	590	1850	1800	-
GD 80	1800	1800	3905	975	1850	1800	-
GD 100	2150	2150	3930	870	2200	2150	-
GD 125	2150	2150	4285	925	2200	2150	-

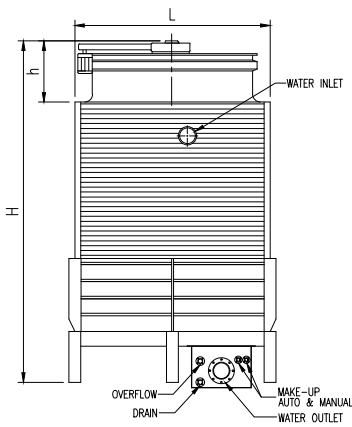
## GD - ONE CELL



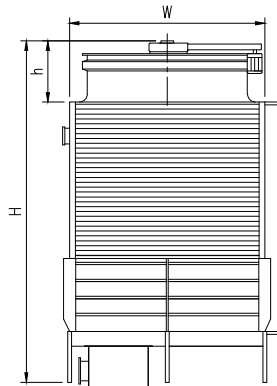
PLAN VIEW



CONCRETE FOUNDATION  
FOR GD150 TO GD325



FRONT VIEW

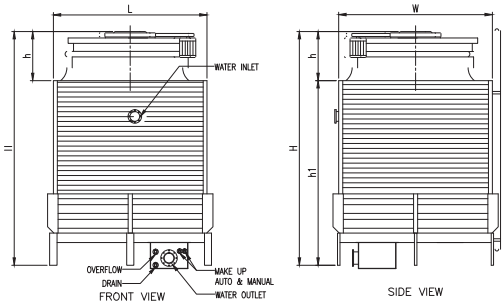
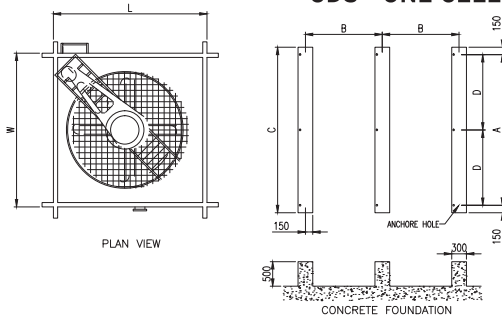


SIDE VIEW

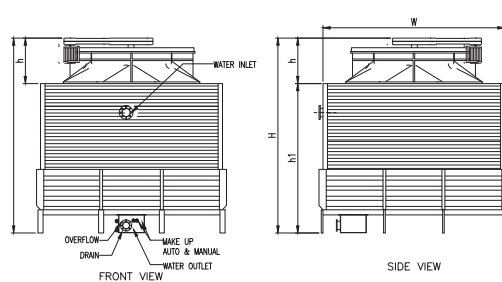
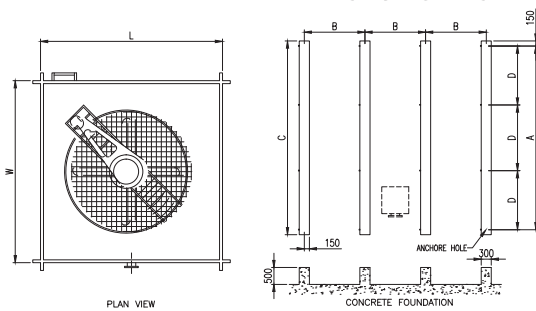
NOTE: ALL DIMENSION IN MM

MODEL	TOWER DIMENSION				FOUNDATION DETAILS		
	L	W	H	h	A	B	C
GD 150	2750	2750	4310	880	2800	1375	-
GD 175	2750	2750	4310	880	2800	1375	-
GD 200	2750	2750	4670	880	2800	1375	-
GD 225	3150	3150	4670	880	3200	1575	-
GD 250	3150	3150	4670	880	3200	1575	-
GD 280	3350	3350	5100	1060	3400	1675	-
GD 300	3350	3350	5360	1320	3400	1675	-
GD 325	3350	3350	5100	1060	3400	1675	-

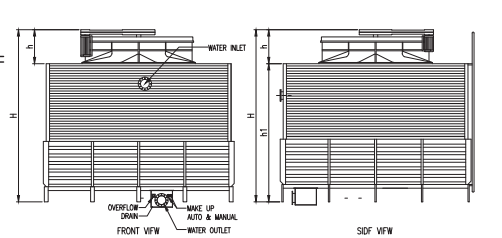
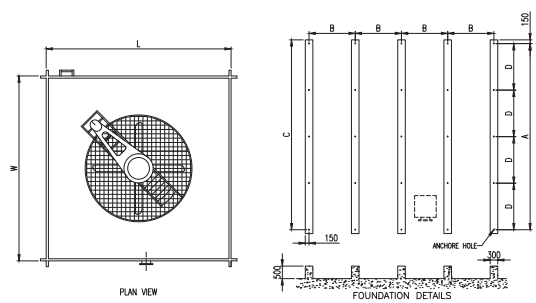
## GDS - ONE CELL



## GDS - ONE CELL



## GDS - ONE CELL



## GDS 350-1B ~ GDS 700-1B

NOTE: ALL DIMENSION IN mm

MODEL	TOWER DIMENSION					FOUNDATION DETAILS			
	L	W	H	h1	h	A	B	C	D
GDS 350-1B	3550	3550	5095	4035	1060	3600	1775	3900	1800
GDS 400-1B	3550	3550	5355	4035	1320	3600	1775	3900	1800
GDS 450-1B	3950	3950	5380	4085	1295	4000	1975	4300	2000
GDS 500-1B	4350	4350	5430	4135	1295	4400	2175	4700	2200
GDS 550-1B	4350	4350	5430	4135	1295	4400	2175	4700	2200
GDS 600-1B	4800	4800	5730	4435	1295	4850	2400	5150	2425
GDS 650-1B	5100	5100	5770	4435	1335	5150	2550	5450	2575
GDS 700-1B	5100	5100	5770	4435	1335	5150	2550	5450	2575

## GDS 750-1B ~ GDS 1000-1B

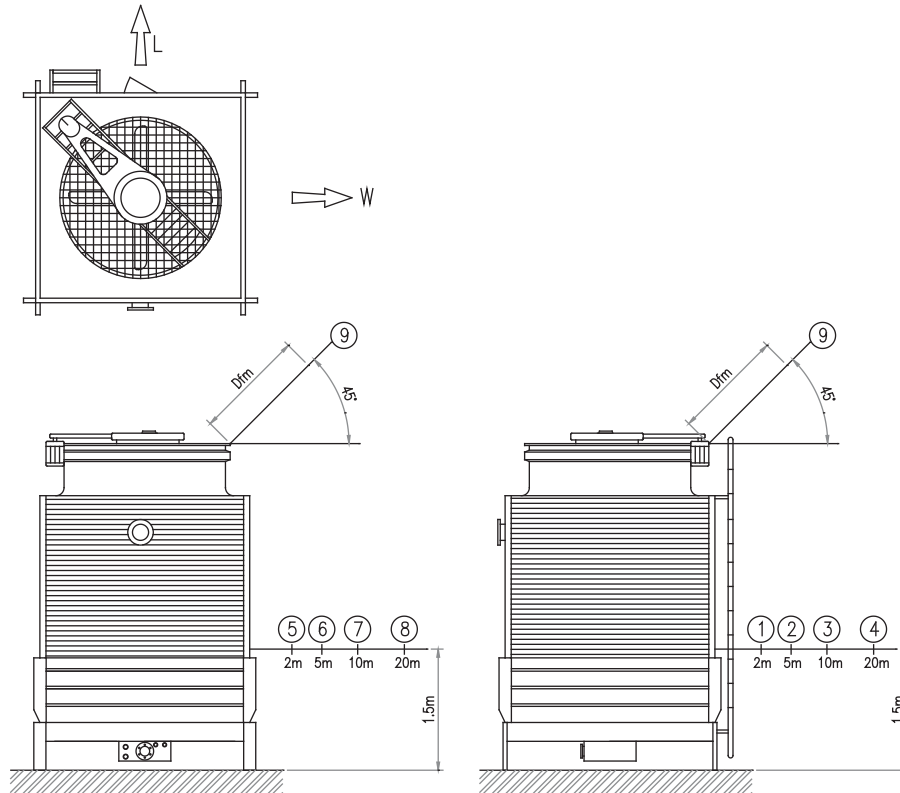
NOTE: ALL DIMENSION IN mm

MODEL	TOWER DIMENSION					FOUNDATION DETAILS			
	L	W	H	h1	h	A	B	C	D
GDS 750-1B	5400	5400	5785	4435	1350	5450	1800	5750	1817
GDS 800-1B	5400	5400	5840	4490	1350	5450	1800	5750	1817
GDS 850-1B	5700	5700	5840	4490	1350	5750	1900	6050	1917
GDS 900-1B	5700	5700	5840	4490	1350	5750	1900	6050	1917
GDS 950-1B	5700	5700	5840	4490	1350	5750	1900	6050	1917
GDS 1000-1B	6000	6000	5840	4490	1350	6050	2000	6350	2017

## GDS 1150-1B ~ GDS 1500-1B

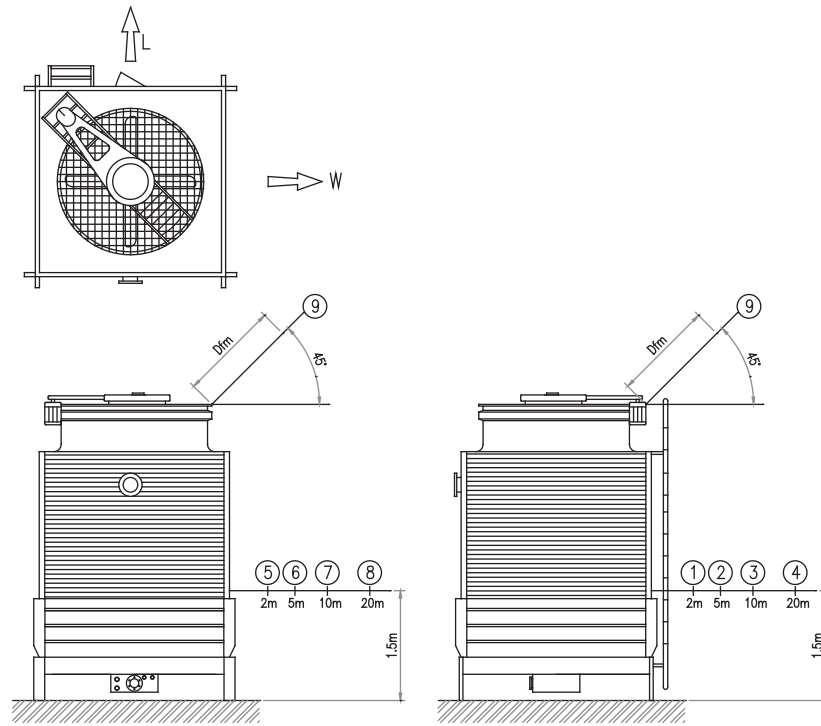
NOTE: ALL DIMENSION IN mm

MODEL	TOWER DIMENSION					FOUNDATION DETAILS			
	L	W	H	h1	h	A	B	C	D
GDS 1150-1B	6300	6300	6490	5140	1350	6350	1575	6650	1587.5
GDS 1250-1B	6600	6600	6490	5140	1350	6650	1650	6950	1662.5
GDS 1400-1B	7350	7350	6840	5490	1350	7400	1837.5	7700	1850
GDS 1500-1B	7350	7350	6840	5490	1350	7400	1837.5	7700	1850



TOWER MODEL	Louver (L)				Panel (W)				FAN (Dfm) (45°)
	①	②	③	④	⑤	⑥	⑦	⑧	⑨
GD50	70	62	56	50	70	62	56	50	69
GD50S	64	56	50	44	64	56	50	44	69
GD60	70	62	56	50	70	62	56	50	69
GD60S	64	56	50	44	64	56	50	44	69
GD70	71	63	57	51	71	63	57	51	70
GD70S	65	57	51	45	65	57	51	45	70
GD80	71	63	57	51	71	63	57	51	70
GD80S	65	57	51	45	65	57	51	45	70
GD100	71	63	57	51	71	63	57	51	70
GD100S	65	57	51	45	65	57	51	45	70
GD125	72	64	58	52	72	64	58	52	71
GD125S	66	58	52	46	66	58	52	46	71
GD150	72	64	58	52	72	64	58	52	71
GD150S	66	58	52	46	66	58	52	46	71
GD175	72	64	58	52	72	64	58	52	71
GD175S	66	58	52	46	66	58	52	46	71
GD200	73	65	59	53	73	65	59	53	72
GD200S	67	59	53	47	67	59	53	47	72
GD225	73	65	59	53	73	65	59	53	72
GD225S	67	59	53	47	67	59	53	47	72
GD250	73	65	59	53	73	65	59	53	72
GD250S	67	59	53	47	67	59	53	47	72
GD280	73	65	59	53	73	65	59	53	72
GD280S	67	59	53	47	67	59	53	47	72
GD300	73	65	59	53	73	65	59	53	73
GD300S	67	59	53	47	67	59	53	47	73
GD325	74	66	60	54	74	66	60	54	73
GD325S	68	60	54	48	68	60	54	48	73

# GDS SERIES NOISE DATA



TOWER MODEL	Louver (L)				Panel (W)				FAN (Dfm) (45°)
	①	②	③	④	⑤	⑥	⑦	⑧	⑨
GDS350-1B	77	69	66	57	77	69	66	57	77
GDS350-1BS	71	68	66	51	71	68	66	51	77
GDS400-1B	78	70	67	58	78	70	67	58	78
GDS400-1BS	71	68	66	51	71	68	66	51	78
GDS450-1B	78	70	67	58	78	70	67	58	78
GDS450-1BS	71	68	66	51	71	68	66	51	78
GDS500-1B	78	70	67	58	78	70	67	58	79
GDS500-1BS	72	69	67	52	72	69	67	52	79
GDS550-1B	79	71	68	59	79	71	68	59	80
GDS550-1BS	73	70	68	53	73	70	68	53	80
GDS600-1B	80	72	69	60	80	72	69	60	81
GDS600-1BS	74	71	69	54	74	71	69	54	81
GDS650-1B	81	73	70	61	81	73	70	61	81
GDS650-1BS	75	72	70	55	75	72	70	55	81
GDS700-1B	82	74	71	62	82	74	71	62	81
GDS700-1BS	75	72	70	55	75	72	70	55	81
GDS750-1B	82	74	71	62	82	74	71	62	82
GDS750-1BS	76	73	69	56	76	73	69	56	82
GDS800-1B	83	75	72	63	83	75	72	63	82
GDS800-1BS	76	73	71	56	76	73	71	56	82
GDS850-1B	83	75	72	63	83	75	72	63	82
GDS850-1BS	77	74	72	57	77	74	72	57	82
GDS900-1B	84	76	73	64	84	76	73	64	83
GDS900-1BS	77	74	72	57	77	74	72	57	83
GDS950-1B	84	76	73	64	84	76	73	64	83
GDS950-1BS	78	75	73	58	78	75	73	58	83
GDS1000-1B	85	77	74	65	85	77	74	65	83
GDS1000-1BS	78	75	73	58	78	75	73	58	83
GDS1150-1B	85	77	74	65	85	77	74	65	83
GDS1150-1BS	79	76	74	59	78	76	74	59	83
GDS1250-1B	86	78	75	66	85	77	74	65	84
GDS1250-1BS	79	76	74	59	79	76	74	59	84
GDS1400-1B	86	78	75	66	86	78	75	66	84
GDS1400-1BS	80	77	75	60	79	77	75	60	84
GDS1500-1B	87	79	76	67	86	78	75	66	84
GDS1500-1BS	80	77	75	60	80	77	75	60	84



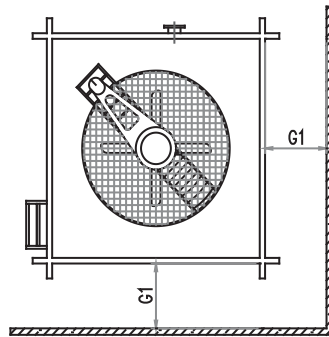


FIGURE : 1

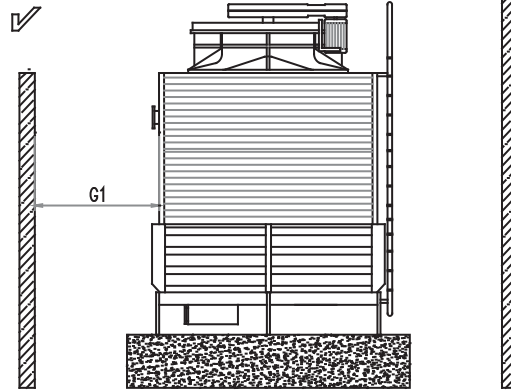


FIGURE : 2

Refer Table 1, for the distance recommended if cooling tower is located near to a wall.

Tower Size	Recommended Distance (mm)
	G1
50 - 250 HRT	1500
280 - 450 HRT	1800
500 - 950 HRT	2400
1000 - 1500 HRT	3000

Table 1: Distance Cooling Tower to Wall

Based on Figure 2, the wall near to the cooling tower is always recommended to be lower than cooling tower. This is to prevent discharge air from cooling tower to recirculate, as this will effect the cooling tower's performance.

It is always preferred, if the wall is a louvered wall, that there should be a 70% net free area and the louver height should not be higher than cooling tower.

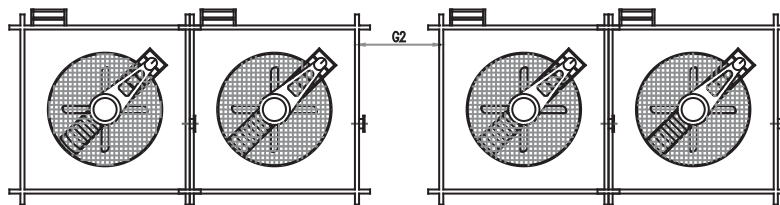


FIGURE 3

Tower Size	Recommended Distance (mm)
	G2
All Models	1000

Table 2: Distance Cooling in Series Arrangement

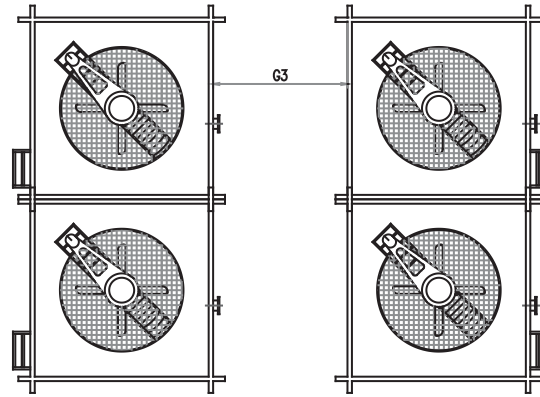


FIGURE 4

Tower Size	Recommended Distance (mm)	
	G3	
50 -450 HRT	3000	
500 - 1000 HRT	4000	
1150 - 1500 HRT	5000	

Table 3: Distance Cooling in Parallel Arrangement

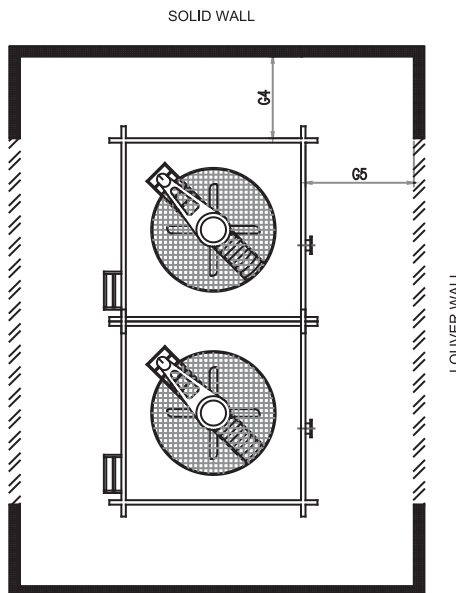


FIGURE 5

Tower Size	Recommended Distance (mm)	
	G4	G5
50 -450 HRT	3000	1500-2000
500 - 1000 HRT	3500	1800-2500
1150 - 1500 HRT	4000	2000-3000

Table 4: Distance Cooling between Solid Wall & Louver Wall



## GEAR REDUCER

In addition to using V belt, right angle reduction gears are used for stringer application that requires no down time due to wear and tear. This type of option gives the building owner the convenience of planning the down time for planned maintenance. Design features and ratings are in accordance with the minimum requirements of AGMA (American Gear Manufacturers Association) and CTI (Cooling Technology Institute) standards.



## HANDRAIL

The safety option is to ensure that working at elevated height of cooling tower is now complete with guard rail around the tower parameters. This option can be further enhanced with caged ladder which is an added feature as well.



## HIGH EFFICIENCY MOTOR

Our high efficiency motor are rated to Eff2 or IE1 (standard) , Eff1 and IE2 (high efficiency). We also offer latest IE3 (premium) standards as indicated by IEC 60034-30. The choice of efficiency is up the client's preferences. For usage with variable speed inverters, we recommend special modification to the motor is required in order to allow the motor to operate at low frequency.



## DISCHARGE HOOD

This option gives alternative diversion of hot air discharge from the fan stack to other direction deemed more suitable. It is made from Fibreglass Reinforced Polyester (FRP) which is the same material as the fan stack. The most popular discharge angle is 45°.



The Ultimate Cooling Machine

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