



KING SUN
INDUSTRY



HKD



CROSSFLOW MODULAR TYPE
COOLING TOWER



MEMBER OF THE CTI



Environmental Management
EC012



HKD

MAIN BENEFITS

HKD cooling towers offer a big convenience to end users: maintenance is easy and safe. With crossflow configuatration, the cooling towers have an open plenum chamber and large access doors, providing easy access to all of the internal parts when repair or maintenance is required.

FEATURES AND ADVANTAGES

Easy Maintenance & Inspection

The large access door and walkway in the plenum chamber provide easy access to the internal parts of the cooling tower, making visual inspection and matientance easy and safe.

Lower Initial Cost With Pumping System

Crossflow type cooling towers distribute hot water to the fills by gravity through metering orifices in the distribution pan, so pumping head requirement is lower. Lower pumping head requires smaller water pumps.

Allowable For Water Flow Variance

Crossflow type cooling towers accept larger variation in water flow without adverse effect on the water distribution pattern, offering great convenience to operation when system loading reduces at night or in cold winter.

Durable Construction

Utilizing hot-dip galvanized steel frame for added strength and fiberglass panels for corrosion resistance, HKD cooling towers promise system owners a long service life.

High Efficiency Hanging Type PVC Fills

Designed with special corrugation pattern, the hanging type PVC fills effectively maximize air & water contact time, contributing high heat exchange efficiency to the cooling tower.

Less Clogging

Hanging type fills do not tend to trap and collect dirt.

Low Drift Loss

Each of the fill sheets is formed with specially designed hooks, effectively limiting drift loss to very low percentage and eliminating the demand of separate drfit eliminator.

Slope Cold Water Basin

The cold water basin was intentionally designed in slop shape. Dirts and sediments can easily be washed to and collected in the water sump, so sweeping system is not necessary.

Louver Type Air Intake

The ingeniously designed air intake louvers ensure an even air pattern entry into the cooling towers, contributing to high cooling efficiency and effectively eliminating water splashing.

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MODEL NUMBER EXPLANATION

Model Designation Format: HKD- XXX - A B C
(Example: HKD-616-FLK)

Where: HKD = product line name
XXX = model number

A = material of casing & basin
F = F.R.P
G = H.D.G.S

B = noise level classification
N = normal
L = low noise
U = super low noise

C = motor horsepower	
G = 1.5kW (2HP)	R = 18.5kW (25HP)
H = 2.2kW (3HP)	T = 22kW (30HP)
K = 3.7kW (5HP)	U = 30kW (40HP)
L = 5.5kW (7.5HP)	V = 37kW (50HP)
M = 7.5kW (10HP)	W = 45kW (60HP)
N = 11kW (15HP)	X = 55kW (75HP)
P = 15kW (20HP)	

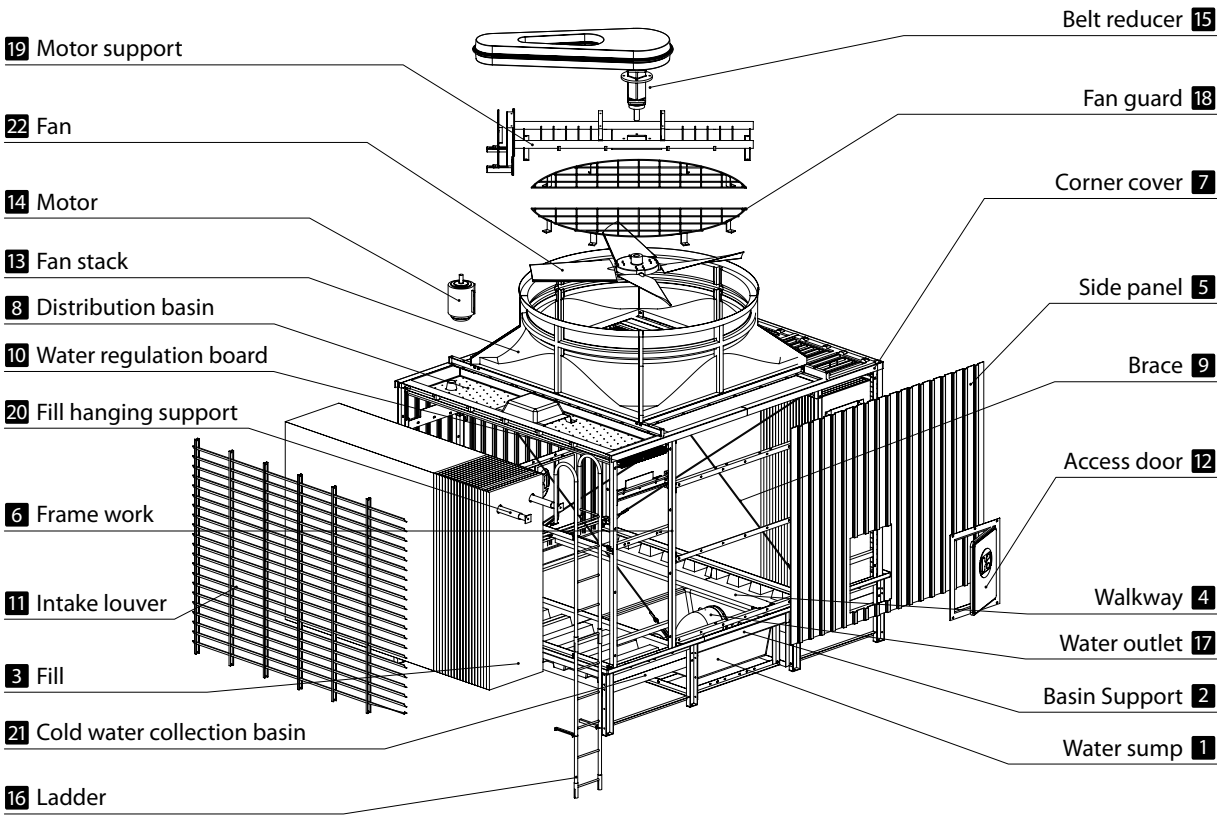


HKD Crossflow Modular Type Cooling Tower



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STRUCTURAL DRAWING

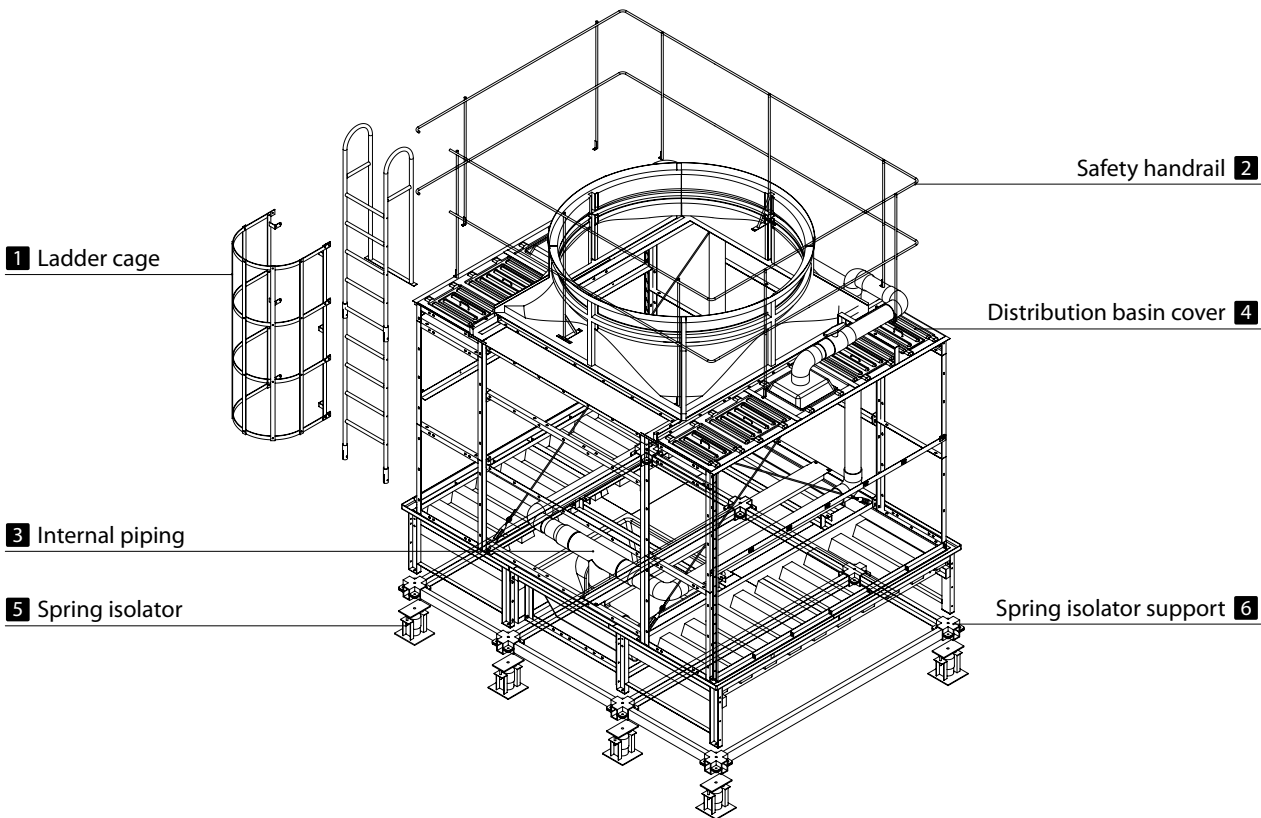


Standard Specifications

No.	Parts	Material	No.	Parts	Material
1	Water sump	F.R.P	11	Air-intake louver	P.V.C
2	Basin support	H.D.G. Steel	12	Access door	F.R.P
3	Fill (hanging type) (drift eliminator is integrated with each pc of fill sheet)	P.V.C.	13	Fan stack	F.R.P
4	Walkway	H.D.G Steel	14	Motor	
5	Side panel	F.R.P	15	Belt reducer	
6	Frame work	H.D.G Steel	16	Ladder	H.D.G Steel
7	Corner cover	P.V.C	17	Water outlet	
8	Hot water distribution basin	F.R.P	18	Fan guard	H.D.G Steel
9	Brace	H.D.G Steel	19	Motor support	H.D.G Steel
10	Water regulation board	P.V.C	20	Fill hanging support	H.D.G Steel
			21	Cold water collection basin	F.R.P
			22	Fan	F.R.P / Al Alloy

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OPTIONAL PARTS AND MATERIALS



No.	Optional Parts	Material	Optional Material
1	Ladder cage	H.D.G. Steel	SUS304, SUS316
2	Safety handrail	H.D.G. Steel	SUS304, SUS316
3	Internal piping	P.V.C	H.D.G.S
4	Distribution basin cover	F.R.P	
5	Spring isolator	H.D.G.Steel	SUS304
6	Spring isolator support	H.D.G.Steel	SUS304, SUS316
P.S. For models above 500-C1, spring isolator support is necessary. For 500-C1 and below, depends on customer's requirement.			

Remarks

H.D.G.S Hot Dip Galvanized Steel
SUS304 Stainless steel Grade 304
SUS316 Stainless steel Grade 316

P.V.C. Polyvinyl Chloride
F.R.P Fiberglass Reinforced Plastics



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SELECTION TABLE I

Design Temperature Condition	A	B	C	D	E	F	G	H
Wet Bulb °C	21	24	25.56	27	28	28	27	29
Inlet Water Temperature °C	32	35	35.00	37	37	38	35	39
Outlet Water Temperature °C	27	30	29.44	32	32	33	30	33
Model No	Water Flow Rate (m3/hr)							
HKD-407-FLF	49	58	38	57	49	61	35	45
HKD-407-FLG	55	65	42	64	55	68	40	51
HKD-407-FLH	62	73	48	72	61	76	44	57
HKD-407-FLK	74	87	57	85	73	90	53	68
HKD-409-FLG	59	70	46	69	58	73	42	54
HKD-409-FLH	69	82	52	80	68	85	50	63
HKD-409-FLK	80	95	62	93	79	99	58	74
HKD-409-FLL	92	109	71	107	91	113	66	84
HKD-511-FLH	70	82	55	80	69	85	52	65
HKD-511-FLK	85	99	66	97	84	103	62	78
HKD-511-FLL	95	111	75	109	94	115	70	88
HKD-511-FLM	105	122	83	120	103	127	77	97
HKD-514-FLH	84	98	66	96	83	102	62	78
HKD-514-FLK	102	119	79	117	101	123	75	94
HKD-514-FLL	114	133	90	131	113	138	84	106
HKD-514-FLM	125	147	99	144	125	152	93	116
HKD-616-FLH	100	116	79	114	100	121	73	92
HKD-616-FLK	121	141	94	138	119	146	89	112
HKD-616-FLL	135	158	107	155	134	164	100	125
HKD-616-FLM	149	174	118	171	150	181	110	138
HKD-719-FLH	114	134	89	132	113	140	82	105
HKD-719-FLK	138	163	107	160	137	170	99	127
HKD-719-FLL	154	182	121	179	153	190	112	143
HKD-719-FLM	170	201	133	197	169	209	123	157
HKD-721-FLK	138	164	110	161	137	171	100	128
HKD-721-FLL	162	191	125	188	161	199	117	150
HKD-721-FLM	174	206	138	203	175	215	126	162
HKD-721-FLN	200	236	158	232	200	246	144	185
HKD-724-FLK	149	176	116	173	150	183	108	138
HKD-724-FLL	174	206	133	202	175	214	126	161
HKD-724-FLM	187	222	146	218	186	231	135	174
HKD-724-FLN	215	254	168	250	213	265	155	199
HKD-829-FLL	179	212	140	208	178	221	129	166
HKD-829-FLM	201	238	154	235	200	248	145	186
HKD-829-FLN	226	267	176	262	225	278	163	209
HKD-829-FLP	248	294	194	289	250	306	180	230
HKD-831-FLL	199	236	156	232	200	246	144	185
HKD-831-FLM	224	265	171	260	225	276	162	207
HKD-831-FLN	251	297	196	292	250	309	181	233
HKD-831-FLP	276	327	216	321	274	341	200	256
HKD-1034-FLL	212	251	166	247	211	262	160	197
HKD-1034-FLM	238	282	186	277	237	294	179	221
HKD-1034-FLN	267	316	209	311	265	330	201	248
HKD-1034-FLP	294	348	230	342	292	363	222	273

- 1 Please verify the wet bulb temperature at the geographical location where the tower is to be installed before consulting the Selection Table.
- 2 Should the design temperature condition not be within the selection temperature range of the table, please contact your King Sun representative.
- 3 In order to select the cooling tower model no., the data below are necessary
 - Water flow rate
 - Entering temperature
 - WBT... wet bulb temperature
 - Leaving temperature

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SELECTION TABLE II

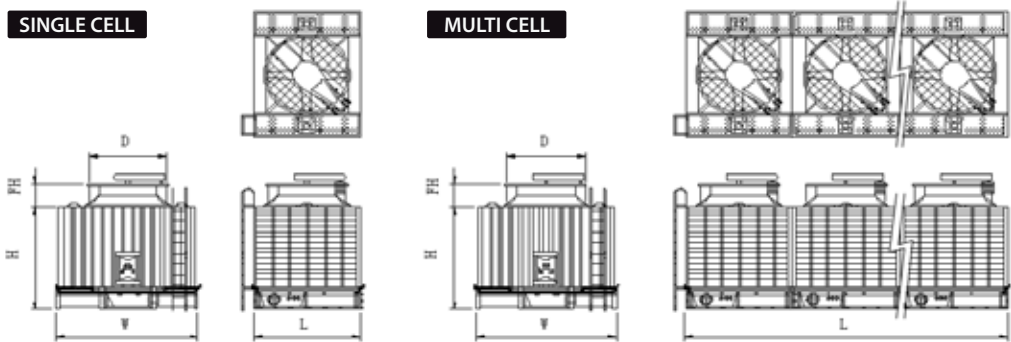
Design Temperature Condition	A	B	C	D	E	F	G	H
Wet Bulb °C	21	24	25.56	27	28	28	27	29
Inlet Water Temperature °C	32	35	35.00	37	37	38	35	39
Outlet Water Temperature °C	27	30	29.44	32	32	33	30	33
Model No	Water Flow Rate (m3/hr)							
HKD-1036-FLM	224	288	171	260	225	300	176	207
HKD-1036-FLN	285	337	221	331	283	351	206	264
HKD-1036-FLP	307	363	243	357	305	379	222	285
HKD-1036-FLR	331	391	262	385	328	408	239	306
HKD-1039-FLM	259	307	203	302	258	320	188	240
HKD-1039-FLN	303	359	232	353	301	374	219	281
HKD-1039-FLP	327	387	256	380	325	403	236	303
HKD-1039-FLR	352	417	275	410	350	434	255	326
HKD-1144-FLM	292	345	228	340	290	360	211	271
HKD-1144-FLN	341	403	261	397	339	420	246	316
HKD-1144-FLP	368	435	287	428	365	454	266	341
HKD-1144-FLR	396	469	310	461	400	489	286	367
HKD-1149-FLM	324	384	254	377	322	400	234	301
HKD-1149-FLN	379	448	290	441	376	467	274	351
HKD-1149-FLP	409	483	319	475	406	504	295	379
HKD-1149-FLR	440	521	344	512	437	543	318	408
HKD-1159-FLN	367	431	294	424	365	448	270	342
HKD-1159-FLP	412	484	324	476	410	503	303	384
HKD-1159-FLR	435	511	349	503	432	531	320	405
HKD-1159-FLT	462	543	371	534	459	564	340	430
HKD-1169-FLN	426	500	342	492	423	520	313	396
HKD-1169-FLP	478	561	376	552	475	584	352	445
HKD-1169-FLR	505	593	405	583	502	616	371	470
HKD-1169-FLT	536	630	430	620	533	655	394	499
HKD-1279-FLP	497	584	399	575	500	607	366	463
HKD-1279-FLR	547	642	430	632	543	667	402	509
HKD-1279-FLT	569	669	457	658	566	695	419	530
HKD-1279-FLU	627	736	503	724	623	765	461	583
HKD-1289-FLR	567	666	455	655	564	692	417	528
HKD-1289-FLT	615	722	484	711	611	751	452	573
HKD-1289-FLU	663	779	532	767	659	810	488	618
HKD-1289-FLV	715	839	573	826	710	872	525	665
HKD-1499-FLR	630	740	505	728	626	769	463	586
HKD-1499-FLT	683	802	537	789	679	834	502	636
HKD-1499-FLU	737	865	591	851	732	899	542	686
HKD-1499-FLV	794	932	637	917	800	969	584	739
HKD-11A9-FLT	642	745	529	779	700	779	529	619
HKD-11A9-FLU	712	826	586	864	760	864	582	687
HKD-11A9-FLV	780	904	642	946	831	945	639	751
HKD-12C9-FLU	784	910	645	951	836	951	638	756
HKD-12C9-FLV	841	975	692	1020	900	1020	688	811
HKD-12C9-FLW	909	1054	748	1102	969	1102	743	876
HKD-12C9-FLX	969	1123	797	1175	1033	1175	792	934

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DIMENSIONS & SPECIFICATIONS

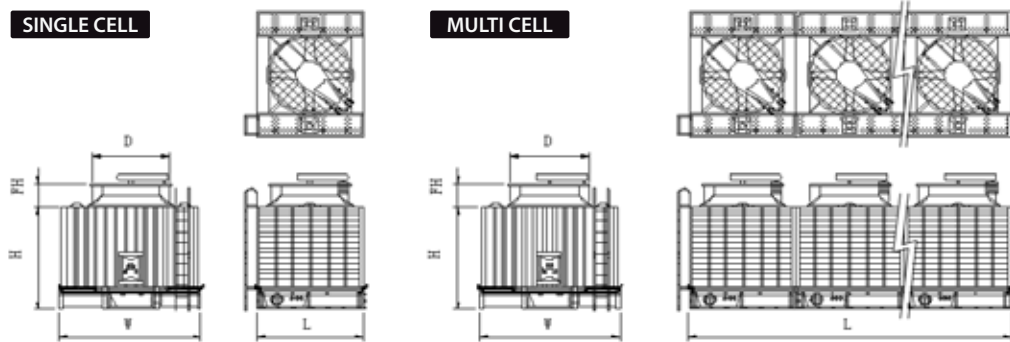


Model No. HKD	Dimensions (mm)				Water Flow Rate		Fan Motor	Fan Dia. Φ	Head	Dry Weight	Operating Weight
	L	W	H	FH	at 37-32-27 °C		kW	mm	M	kg	kg
					m³/h	LPM					
407-FLF	1480	3140	2725	470	57	950	1.1	1200	3.1	720	1590
407-FLG					64	1067	1.5			725	1595
407-FLH					72	1200	2.2			735	1605
407-FLK					85	1417	3.7			745	1615
409-FLG	1780	3140	2725	470	69	1150	1.5	1200	3.1	790	1810
409-FLH					80	1333	2.2			800	1820
409-FLK					93	1550	3.7			810	1830
409-FLL					107	1783	5.5			830	1850
511-FLH	1780	3440	3025	550	80	1333	2.2	1500	3.3	1040	2430
511-FLK					97	1617	3.7			1050	2440
511-FLL					109	1817	5.5			1070	2460
511-FLM					120	2000	7.5			1080	2470
514-FLH	2080	3440	3025	550	96	1600	2.2	1500	3.3	1080	2610
514-FLK					117	1950	3.7			1090	2620
514-FLL					131	2183	5.5			1110	2640
514-FLM					144	2400	7.5			1120	2650
616-FLH	2080	3740	3025	700	114	1900	2.2	1800	3.3	1120	2790
616-FLK					138	2300	3.7			1130	2800
616-FLL					155	2583	5.5			1150	2820
616-FLM					171	2850	7.5			1160	2830
719-FLH	2380	4040	3325	700	132	2200	2.2	2100	3.6	1200	3050
719-FLK					160	2667	3.7			1210	3060
719-FLL					179	2983	5.5			1230	3080
719-FLM					197	3283	7.5			1240	3090
721-FLK	2680	4040	3325	700	161	2683	3.7	2100	3.6	1280	3305
721-FLL					188	3133	5.5			1300	3330
721-FLM					203	3383	7.5			1310	3340
721-FLN					232	3867	11			1360	3385
724-FLK	2980	4040	3475	700	173	2883	3.7	2100	3.8	1440	3750
724-FLL					202	3367	5.5			1460	3770
724-FLM					218	3633	7.5			1470	3780
724-FLN					250	4167	11			1515	3820

Remarks: The water flow rates on the table are based on design temperature conditions: 37°C inlet, 32°C outlet, 27°C WBT.

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DIMENSIONS & SPECIFICATIONS



Model No. HKD	Dimensions (mm)				Water Flow Rate		Fan Motor	Fan Dia. Φ	Head	Dry Weight	Operating Weight
	L	W	H	FH	at 37-32-27 °C		kW	mm	M	kg	kg
					m³/h	LPM					
829-FLL	2980	4360	3475	750	208	3467	5.5	2400	3.8	1550	3870
829-FLM					235	3917	7.5			1560	3880
829-FLN					262	4367	11			1600	3930
829-FLP					289	4817	15			1620	3940
831-FLL	3320	4360	3475	750	232	3867	5.5	2400	3.8	1650	3990
831-FLM					260	4333	7.5			1660	4000
831-FLN					292	4867	11			1705	4045
831-FLP					321	5350	15			1720	4060
1034-FLL	3320	5000	3475	750	247	4117	5.5	3000	3.8	1760	4280
1034-FLM					277	4617	7.5			1770	4290
1034-FLN					311	5183	11			1815	4330
1034-FLP					342	5700	15			1830	4345
1036-FLM	3580	5000	3475	750	283	4723	7.5	3000	3.8	1900	4610
1036-FLN					331	5517	11			1945	4655
1036-FLP					357	5951	15			1960	4670
1036-FLR					385	6410	18.5			2005	4715
1039-FLM	3880	5000	3475	750	302	5030	7.5	3000	3.8	2080	4980
1039-FLN					353	5875	11			2125	5025
1039-FLP					380	6337	15			2140	5040
1039-FLR					410	6827	18.5			2185	5085
1144-FLM	4180	5400	3475	750	340	5659	7.5	3400	3.8	2305	5540
1144-FLN					397	6610	11			2350	5585
1144-FLP					428	7129	15			2365	5600
1144-FLR					461	7679	18.5			2410	5645
1149-FLM	4780	5400	3475	750	377	6287	7.5	3400	3.8	2435	6055
1149-FLN					441	7343	11			2480	6100
1149-FLP					475	7921	15			2495	6115
1149-FLR					512	8533	18.5			2540	6160

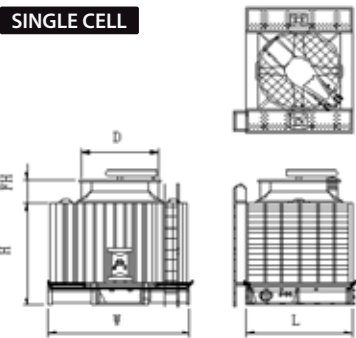
Remarks: The water flow rates on the table are based on design temperature conditions: 37°C inlet, 32°C outlet, 27°C WBT.



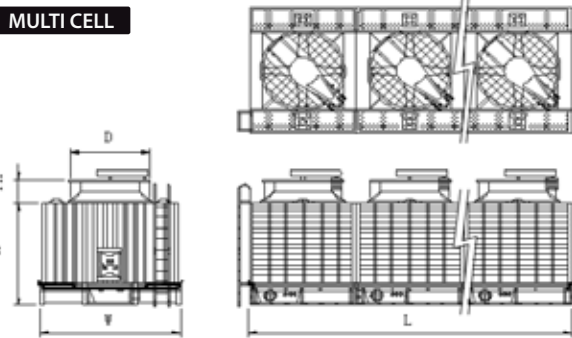
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DIMENSIONS & SPECIFICATIONS

SINGLE CELL



MULTI CELL

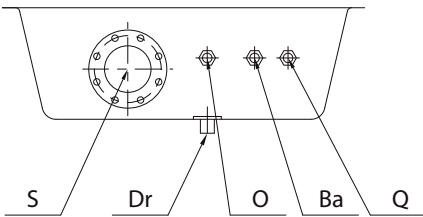


Model No. HKD	Dimensions (mm)				Water Flow Rate		Fan Motor	Fan Dia. Φ	Head	Dry Weight	Operating Weight
	L	W	H	FH	at 37-32-27 °C						
					m³/h	LPM	kW	mm	M	kg	kg
1159-FLN	4280	5780	3925	750	424	7066	11	3400	4.3	3570	8015
1159-FLP					476	7936	15			3585	8030
1159-FLR					503	8378	18.5			3630	8075
1159-FLT					534	8903	22			3635	8080
1169-FLN	4880	5780	3925	750	492	8198	11	3400	4.3	3705	8820
1169-FLP					552	9207	15			3720	8835
1169-FLR					583	9720	18.5			3765	8880
1169-FLT					620	10329	22			3770	8885
1279-FLP	5480	6010	3925	750	575	9578	15	3600	4.3	4325	10590
1279-FLR					632	10528	18.5			4370	10635
1279-FLT					658	10964	22			4375	10640
1279-FLU					724	12067	30			4410	10675
1289-FLR	6080	6010	3925	750	655	10923	18.5	3600	4.3	4845	11675
1289-FLT					711	11845	22			4850	11680
1289-FLU					767	12776	30			4890	11720
1289-FLV					826	13762	37			4990	11820
1499-FLR	6380	6695	3925	750	728	12131	18.5	4270	4.3	5295	12885
1499-FLT					789	13154	22			5300	12890
1499-FLU					851	14189	30			5340	12930
1499-FLV					917	15284	37			5440	13030
11A9-FLT	4820	6338	6152	750	779	12986	22	3400	5.9	6418	17086
11A9-FLU					864	14400	30			6418	17668
11A9-FLV					946	15760	37			6506	18566
12C9-FLU	5619	6568	6152	750	951	15856	30	3600	5.9	7701	19841
12C9-FLV					1020	17004	37			7701	20441
12C9-FLW					1102	18373	45			7701	21301
12C9-FLX					1175	19585	55			7789	22229

Remarks: The water flow rates on the table are based on design temperature conditions: 37°C inlet, 32°C outlet, 27°C WBT.

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PIPE CONNECTION DETAILS



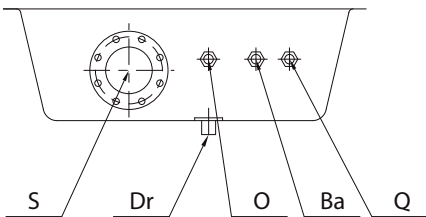
Model	Water Inlet	Water Outlet	Automatic Make Up	Quick Mak Up	Over flow	Drain
HKD	De	S	Ba	Q	O	Dr
407-FLF	3"×2	4"×1	3/4"×1	3/4"×1	2"×1	2"×1
407-FLG	3"×2	4"×1	3/4"×1	3/4"×1	2"×1	2"×1
407-FLH	3"×2	4"×1	3/4"×1	3/4"×1	2"×1	2"×1
407-FLK	3"×2	4"×1	3/4"×1	3/4"×1	2"×1	2"×1
409-FLG	3"×2	5"×1	1"×1	1"×1	2"×1	2"×1
409-FLH	3"×2	5"×1	1"×1	1"×1	2"×1	2"×1
409-FLK	3"×2	5"×1	1"×1	1"×1	2"×1	2"×1
409-FLL	3"×2	5"×1	1"×1	1"×1	2"×1	2"×1
511-FLH	4"×2	5"×1	1"×1	1"×1	2"×1	2"×1
511-FLK	4"×2	5"×1	1"×1	1"×1	2"×1	2"×1
511-FLL	4"×2	5"×1	1"×1	1"×1	2"×1	2"×1
511-FLM	4"×2	5"×1	1"×1	1"×1	2"×1	2"×1
514-FLH	4"×2	6"×1	1"×1	1"×1	2"×1	2"×1
514-FLK	4"×2	6"×1	1"×1	1"×1	2"×1	2"×1
514-FLL	4"×2	6"×1	1"×1	1"×1	2"×1	2"×1
514-FLM	4"×2	6"×1	1"×1	1"×1	2"×1	2"×1
616-FLH	4"×2	6"×1	1"×1	1"×1	2"×1	2"×1
616-FLK	4"×2	6"×1	1"×1	1"×1	2"×1	2"×1
616-FLL	4"×2	6"×1	1"×1	1"×1	2"×1	2"×1
616-FLM	4"×2	6"×1	1"×1	1"×1	2"×1	2"×1
719-FLH	5"×2	6"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
719-FLK	5"×2	6"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
719-FLL	5"×2	6"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
719-FLM	5"×2	6"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
721-FLK	5"×2	6"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
721-FLL	5"×2	6"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
721-FLM	5"×2	6"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
721-FLN	5"×2	6"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
724-FLK	5"×2	8"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
724-FLL	5"×2	8"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
724-FLM	5"×2	8"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
724-FLN	5"×2	8"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
829-FLL	6"×2	8"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
829-FLM	6"×2	8"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
829-FLN	6"×2	8"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
829-FLP	6"×2	8"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1

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- 3 For high temperature applications, there may possibly exist a need to modify the pipe diameters on the water inlet and water outlet. For this type of application, please contact your King Sun representative for advice.



HKD

PIPE CONNECTION DETAILS

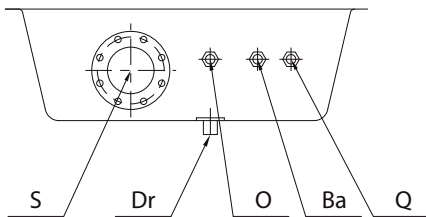


Model	Water	Water	Automatic	Quick	Over flow	Drain
HKD	Inlet	Outlet	Make Up	Mak Up		
	De	S	Ba	Q		
829-FLL	6"×2	8"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
829-FLM	6"×2	8"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
829-FLN	6"×2	8"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
829-FLP	6"×2	8"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
831-FLL	6"×2	8"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
831-FLM	6"×2	8"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
831-FLN	6"×2	8"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
831-FLP	6"×2	8"×1	1 1/4"×1	1 1/4"×1	2"×1	2"×1
1034-FLL	6"×2	8"×1	1 1/2"×1	1 1/2"×1	2"×1	2"×1
1034-FLM	6"×2	8"×1	1 1/2"×1	1 1/2"×1	2"×1	2"×1
1034-FLN	6"×2	8"×1	1 1/2"×1	1 1/2"×1	2"×1	2"×1
1034-FLP	6"×2	8"×1	1 1/2"×1	1 1/2"×1	2"×1	2"×1
1036-FLM	6"×2	10"×1	1 1/2"×1	1 1/2"×1	2"×1	2"×1
1036-FLN	6"×2	10"×1	1 1/2"×1	1 1/2"×1	2"×1	2"×1
1036-FLP	6"×2	10"×1	1 1/2"×1	1 1/2"×1	2"×1	2"×1
1036-FLR	6"×2	10"×1	1 1/2"×1	1 1/2"×1	2"×1	2"×1
1039-FLM	6"×2	10"×1	1 1/2"×1	1 1/2"×1	2"×1	2"×1
1039-FLN	6"×2	10"×1	1 1/2"×1	1 1/2"×1	2"×1	2"×1
1039-FLP	6"×2	10"×1	1 1/2"×1	1 1/2"×1	2"×1	2"×1
1039-FLR	6"×2	10"×1	1 1/2"×1	1 1/2"×1	2"×1	2"×1
1144-FLM	6"×2	10"×1	1 1/2"×1	1 1/2"×1	2"×1	2"×1
1144-FLN	6"×2	10"×1	1 1/2"×1	1 1/2"×1	2"×1	2"×1
1144-FLP	6"×2	10"×1	1 1/2"×1	1 1/2"×1	2"×1	2"×1
1144-FLR	6"×2	10"×1	1 1/2"×1	1 1/2"×1	2"×1	2"×1
1149-FLM	8"×2	10"×1	1 1/2"×1	1 1/2"×1	2"×1	2"×1
1149-FLN	8"×2	10"×1	1 1/2"×1	1 1/2"×1	2"×1	2"×1
1149-FLP	8"×2	10"×1	1 1/2"×1	1 1/2"×1	2"×1	2"×1
1149-FLR	8"×2	10"×1	1 1/2"×1	1 1/2"×1	2"×1	2"×1

- 1 The piping details on the table are for single cell. For multi cells, please multiply them by the number of the cells.
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- 3 For high temperature applications, there may possibly exist a need to modify the pipe diameters on the water inlet and water outlet. For this type of application, please contact your King Sun representative for advice.

HKD

PIPE CONNECTION DETAILS



Model	Water	Water	Automatic	Quick	Over flow	Drain
HKD	Inlet	Outlet	Make Up	Mak Up		
	De	S	Ba	Q		
1159-FLN	6"×4	8"×2	1 1/2"×2	1 1/2"×2	2"×2	2"×2
1159-FLP	6"×4	8"×2	1 1/2"×2	1 1/2"×2	2"×2	2"×2
1159-FLR	6"×4	8"×2	1 1/2"×2	1 1/2"×2	2"×2	2"×2
1159-FLT	6"×4	8"×2	1 1/2"×2	1 1/2"×2	2"×2	2"×2
1169-FLN	6"×4	8"×2	1 1/2"×2	1 1/2"×2	2"×2	2"×2
1169-FLP	6"×4	8"×2	1 1/2"×2	1 1/2"×2	2"×2	2"×2
1169-FLR	6"×4	8"×2	1 1/2"×2	1 1/2"×2	2"×2	2"×2
1169-FLT	6"×4	8"×2	1 1/2"×2	1 1/2"×2	2"×2	2"×2
1279-FLP	6"×4	8"×2	1 1/2"×2	1 1/2"×2	2"×2	2"×2
1279-FLR	6"×4	8"×2	1 1/2"×2	1 1/2"×2	2"×2	2"×2
1279-FLT	6"×4	8"×2	1 1/2"×2	1 1/2"×2	2"×2	2"×2
1279-FLU	6"×4	8"×2	1 1/2"×2	1 1/2"×2	2"×2	2"×2
1289-FLR	8"×4	10"×2	1 1/2"×2	1 1/2"×2	2"×2	2"×2
1289-FLT	8"×4	10"×2	1 1/2"×2	1 1/2"×2	2"×2	2"×2
1289-FLU	8"×4	10"×2	1 1/2"×2	1 1/2"×2	2"×2	2"×2
1289-FLV	8"×4	10"×2	1 1/2"×2	1 1/2"×2	2"×2	2"×2
1499-FLR	8"×4	10"×2	1 1/2"×2	1 1/2"×2	2"×2	2"×2
1499-FLT	8"×4	10"×2	1 1/2"×2	1 1/2"×2	2"×2	2"×2
1499-FLU	8"×4	10"×2	1 1/2"×2	1 1/2"×2	2"×2	2"×2
1499-FLV	8"×4	10"×2	1 1/2"×2	1 1/2"×2	2"×2	2"×2
11A9-FLT	8"×4	12"×2	2"×2	2"×2	2"×2	2"×2
11A9-FLU	8"×4	12"×2	2"×2	2"×2	2"×2	2"×2
11A9-FLV	8"×4	12"×2	2"×2	2"×2	2"×2	2"×2
12C9-FLU	8"×4	12"×2	2"×2	2"×2	2"×2	2"×2
12C9-FLV	8"×4	12"×2	2"×2	2"×2	2"×2	2"×2
12C9-FLW	8"×4	12"×2	2"×2	2"×2	2"×2	2"×2
12C9-FLX	8"×4	12"×2	2"×2	2"×2	2"×2	2"×2

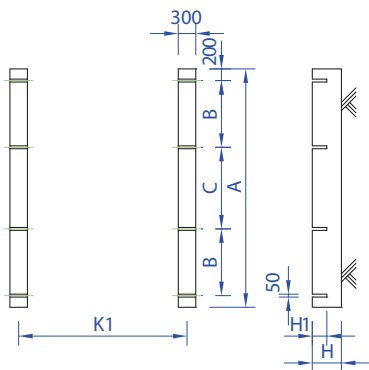
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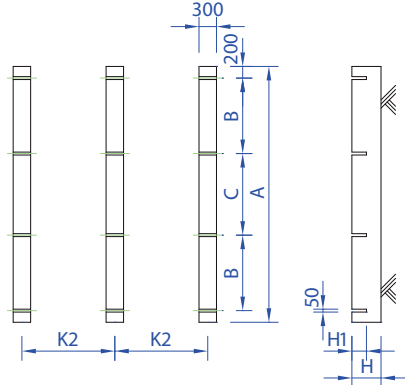
HKD

FOUNDATION DETAILS

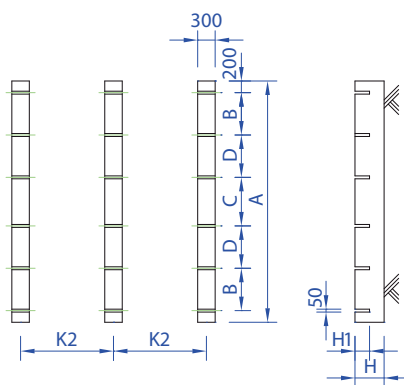
HKD-407~829 SINGLE CELL



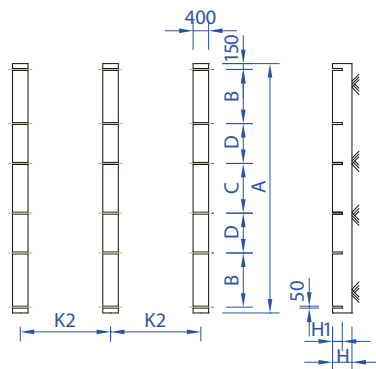
HKD-831~1149 SINGLE CELL



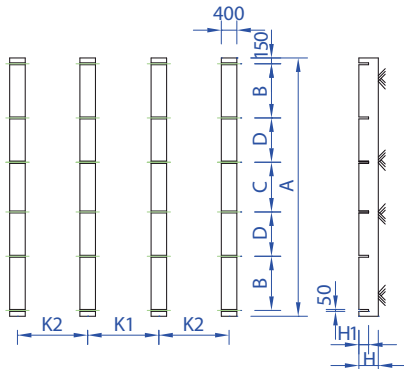
HKD-1159~1499 SINGLE CELL



HKD-11A9 SINGLE CELL



HKD-12C9 SINGLE CELL



HKD

FOUNDATION DETAILS

HKD	Model Location	407	409	511	514	616	719	721	724
1 Cell	A	3370	3370	3670	3670	3970	4270	4270	4270
	B	890	890	935	935	1085	1235	1235	1235
	C	1190	1190	1400	1400	1400	1400	1400	1400
	H	500	500	500	500	500	500	500	500
	H1	250	250	250	250	250	250	250	250
	K1	1340	1640	1640	1940	1940	2240	2540	2840
	K2								
Anchor Bolts M16*200L	1 Cell	8	8	8	8	8	8	8	8
	2 Cells	12	12	12	12	12	12	12	12
	3 Cells	16	16	16	16	16	16	16	16
	4 Cells	20	20	20	20	20	20	20	20
	5 Cells	24	24	24	24	24	24	24	24

HKD	Model Location	829	831	1034	1036	1039	1144	1149	1159
1 Cell	A	4590	4590	5230	5230	5230	5630	5630	6010
	B	1395	1395	1715	1715	1715	1915	1915	1090
	C	1400	1400	1400	1400	1400	1400	1400	1250
	D								1090
	H	500	500	500	500	500	500	500	500
	H1	250	250	250	250	250	250	250	250
	K1	2840							
Anchor Bolts M16*200L	K2		1590	1590	1720	1870	2020	2320	2070
	1 Cell	8	12	12	12	12	12	12	18
	2 Cells	12	20	20	20	20	20	20	30
	3 Cells	16	28	28	28	28	28	28	42
	4 Cells	20	36	36	36	36	36	36	54
	5 Cells	24	44	44	44	44	44	44	66

	Model Location	1169	1279	1289	1499	11A9	12C9
1 Cell	A	6010	6240	6240	6525	6518	6748
	B	1090	1090	1090	1090	1394	1394
	C	1250	1250	1250	1250	1025	1140
	D	1090	1205	1205	1547.5	1280	1280
	H	500	500	500	500	500	500
	H1	250	250	250	250	250	250
	K1						1833
Anchor Bolts M16*200L	K2	2370	2670	2970	3120	2325	1808
	1 Cell	18	18	18	18	18	24
	2 Cells	30	30	30	30	30	42
	3 Cells	42	42	42	42	42	60
	4 Cells	54	54	54	54	54	78
	5 Cells	66	66	66	66	66	96

Remarks:
In the event that spring mount vibration isolators are to be used, the foundation detail would need to be modified. For this type of application, please contact your King Sun representative for advice.



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