



COOLING TOWER

CROSS FLOW

MODEL :

BKC-S-SERIES



Member

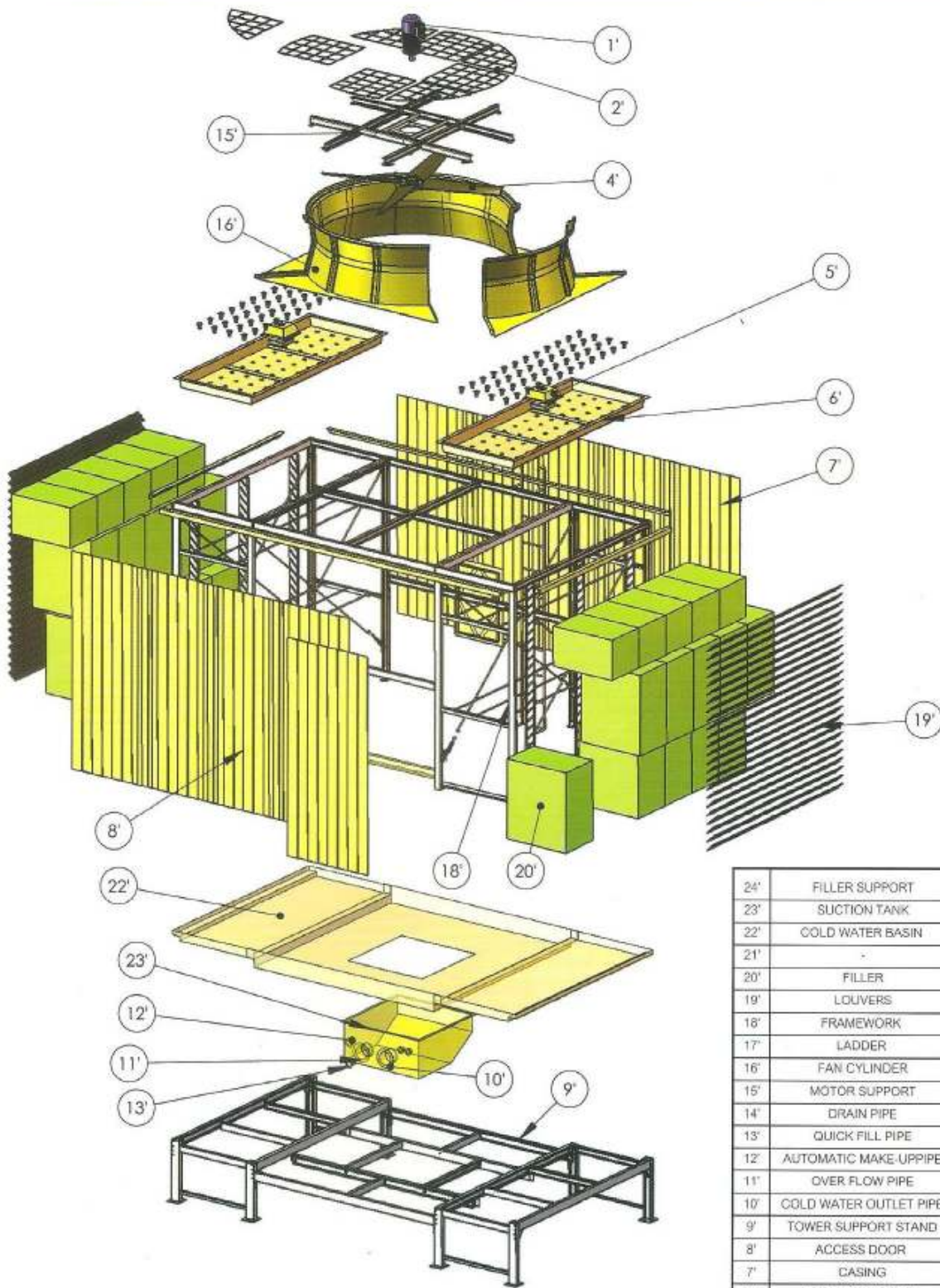


ISO 9001:2008



<http://www.bkkcooling.co.th>

Structural Detail



24'	FILLER SUPPORT	16	DWG.NO BKC-100-01
23'	SUCTION TANK	64	STD.
22'	COLD WATER BASIN	8	DWG.NO BKC-100-03
21'	-	-	-
20'	FILLER	10	STD.
19'	LOUVERS	10	STD.
18'	FRAMEWORK	1	DWG.NO BKC-200-01
17'	LADDER	1	DWG.NO BKC-100-01
16'	FAN CYLINDER	4	DWG.NO BKC-100-04
15'	MOTOR SUPPORT	16	DWG.NO BKC-200-2
14'	DRAIN PIPE	1	STD.
13'	QUICK FILL PIPE	2	STD.
12'	AUTOMATIC MAKE-UPPIPE	1	STD.
11'	OVER FLOW PIPE	1	STD.
10'	COLD WATER OUTLET PIPE	1	STD.
9'	TOWER SUPPORT STAND	1	DWG.NO BKC-200-01
8'	ACCESS DOOR	1	DWG.NO BKC-100-04
7'	CASING	10	DWG.NO BKC-100-04
6'	HOT WATER BASIN	2	DWG.NO BKC-100-04
5'	DISTRIBUTION BOX	2	DWG.NO BKC-100-04
4'	FAN BRADE AND HUB	1	STD.
3'	-	-	-
2'	FAN GUARD	8	STD.
1'	MOTOR	1	STD.
Part NO.	DISCRIPTION	QTY	REMARK

/// Feature

1. Easy maintenance in FRP. Lower water basin.

Lower water basin is made of fiberglass reinforced polyester resin (FRP), Eliminating corrosion which is the biggest enemy of cooling tower. Its lower plate has an incline for easy water flow as well as easy maintenance and cleaning.

2. Weather proof and rust resistant tower casings.

For tower casing, rust and shock resistant rigid Fiberglass Reinforced Polyester Resin (FRP), is used. Compared with the past materials, big advances were made to reduce weight. Such steel components as Post, Beam, Ladder ect., In other words, all steel components are give hot dipped galvanized treatment.

3. Hot water basin maintains stable water sprinkling.

Made of Fiberglass Reinforced Polyester Resin (FRP), it is more than ever durable and non-corrosive, maintaining stable water sprinkling. Our nozzle metering orifices used in the hot water basin specially designed to deliver the required water rate and highly resistant to temperature and weathering damage. The use of nozzle also provides uniform water distribution through out filler area with no need for a separate diffusion deck.

4. High efficiency fill which also eliminates water splash.

The newly developed B.K.K. packing for counter and cross flow tower is made of fire resistant, rigid poly vinyl chloride (PVC), lightweight and durable. It is contoured to prevent water splash as well as carry over, a very highly efficient fill.

5. Energy conserving low noise fan.

Developed by B.K.K. the axial flow aluminum alloy fan is not only low noise but capable of producing large volume air flow. Furthermore, adopting Bell mouth contour around the Fan cylinder enables using smaller fan motor serving the double purpose of energy conservation and minimum running cost.

6. Option mobile piping.

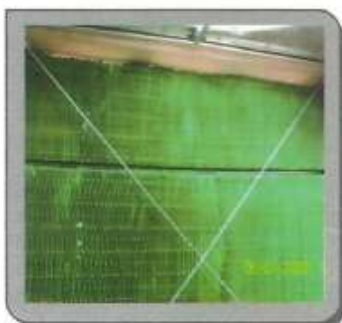
Piping can be freely positioned either on the louver side or panel side. Large outlet diameter of drain allows quick water discharge.

7. Unit construction system.

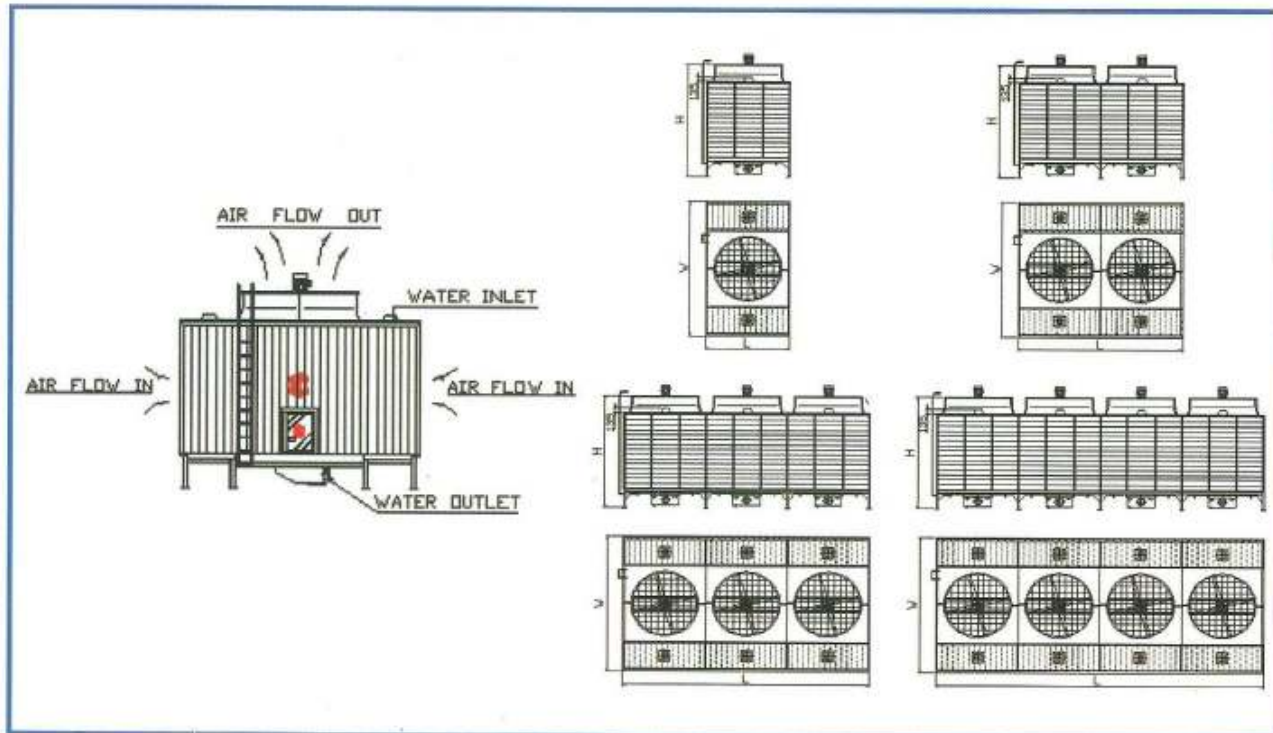
The tower is reassembled in the factory, knocked down into some unit, transported to the job site, and reassembled into the final shape. The quality is thus stable. The transport and set-up is easy and quickly.

8. Footing for all models.

All the models are provided with footings. So the foundation is easy to prepare at a low level. No common base for the Vibra-Isolation Device is required.



Overall Dimension

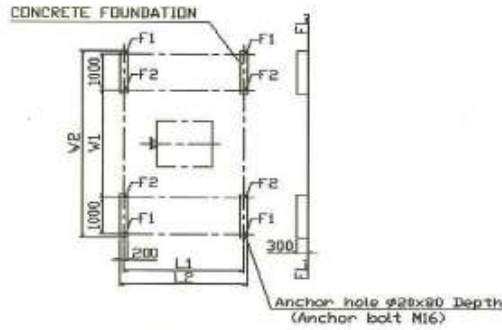


TYPE BKC-S	WATER VOLUME (l/min)	DIMENSION (mm)			AXIAL FLOW FAN				WEIGHT (Kg.)	
		L	W	H	DIAMETER (ϕ mm)	MOTOR			DRY	OPERATION
						HP	P	QTY		
80	1040	1470	3625	3175	1160	2	8	1	635	1950
100	1300	1870	4025	3175	1500	2	8	1	635	1950
125	1675	1870	4025	3525	1500	2	8	1	730	2150
150	1950	2120	4275	3525	1700	3	8	1	780	2190
175	2275	2120	4275	3675	1700	5	10	1	920	2620
200	2800	2570	4725	3825	2100	5	10	1	970	2730
225	2925	2570	4725	4075	2100	7.5	10	1	1130	3160
250	3250	2570	4725	4075	2100	7.5	10	1	1210	3360
300	3900	3070	5225	4375	2400	10	12	1	1480	3820
350	4550	3500	5225	4375	2400	10	12	1	1720	4540
400	5200	5070	4725	3850	2100	5	10	2	1930	5420
500	6600	5070	4725	4300	2100	7.5	10	2	2180	6300
600	7800	6070	5225	4350	2400	10	12	2	2350	6720
700	9100	7070	5225	4350	2400	10	12	2	2830	7530
800	10400	9070	5225	4050	2400	10	12	3	3830	10250
900	11700	9070	5225	4350	2400	10	12	3	4320	12070
1000	13000	10070	4725	4300	2100	7.5	10	4	4680	12940
1200	15600	12070	5225	4350	2400	10	12	4	5850	16670

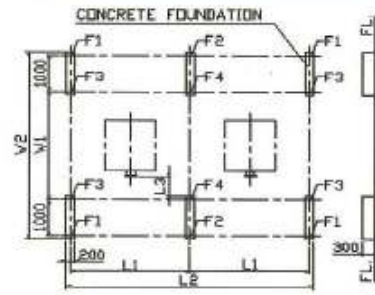
Model : BKC-S-250 & 350 RT (OPTION : Gear Reduced or Belt Drive)

1. Nominal Tons are defined as 13 l/min/Ton, Cooled from 37 °c to 32 °c with 27 °c wetbulb temperature.
2. Total pump head required for cooling tower circulation pump is the sum of condenser water pressure drop, piping friction loss and tower head.

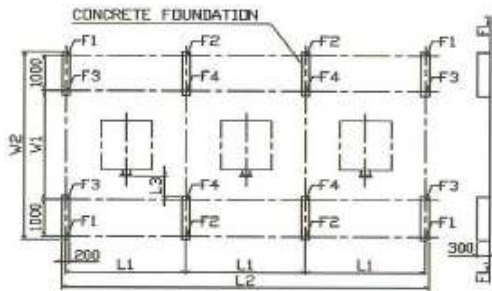
Foundation Dimension



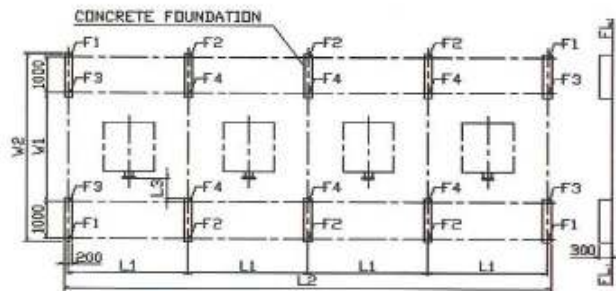
Model : BKC-S-80-350 RT



Model : BKC-S-400-700 RT



Model : BKC-S-800-900 RT

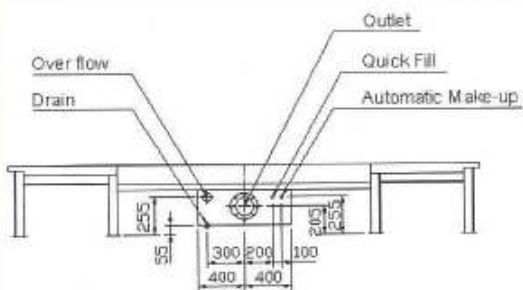


Model : BKC-S-1000-1200 RT

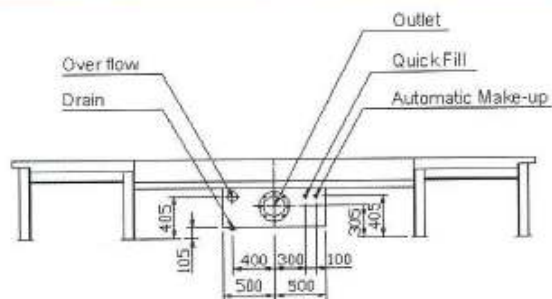
TYPE	SYMBOL				
	L1	L2	L3	W1	W2
80	1400	1600	200	1400	3600
100	1800	2000	400	1800	4000
125	1800	2000	400	1800	4000
150	2050	2250	525	2050	4250
175	2050	2250	525	2050	4250
200	2500	2700	600	2500	4700
225	2500	2700	600	2500	4700
250	2500	2700	600	2500	4700
300	3000	3200	850	3000	5200
350	3500	3700	1100	3000	5200
400	2500	5200	6000	2500	4700
500	2500	5200	6000	2500	4700
600	3000	6200	850	3000	5200
700	3500	7200	850	3500	5200
800	3000	9200	850	3000	5200
900	3000	9200	850	3000	5200
1000	2500	10200	600	2500	4700
1200	3000	12200	850	3000	5200

LOADING DATA			
F-1 (kg.)	F-2 (kg.)	F-3 (kg.)	F-4 (kg.)
150	300		
165	320		
180	360		
200	390		
220	420		
240	450		
270	530		
300	560		
340	630		
420	720		
240	480	450	900
300	600	300	1120
340	680	340	1260
420	840	420	1440
340	680	630	1260
420	840	420	1440
300	600	560	1120
340	680	630	1260

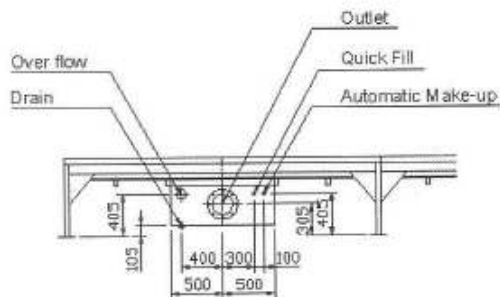
Piping Dimension & Arrangement



Model : BKC-S-80-175 RT



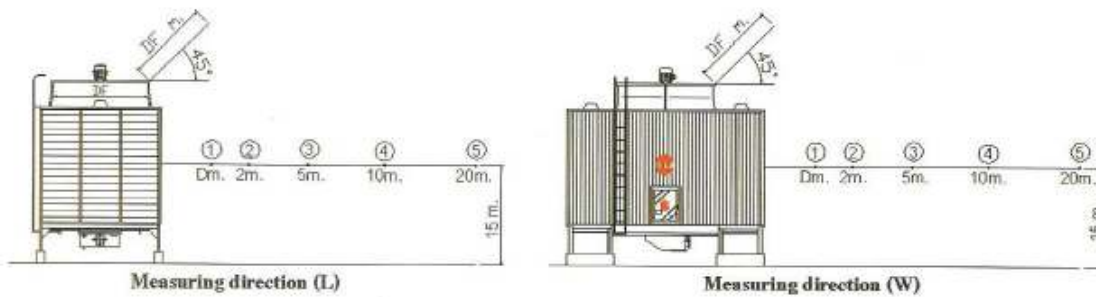
Model : BKC-S-200-350 RT



Model : BKC-S-400-1200 RT

MODEL (RT)	PIPING DIMENSION						
	BKC-S	Outlet Pipe	Inlet Pipe	Over Flow Pipe	Drain Pipe	Make-Up Pipe	Quick Fill Pipe
80	80	100	80x2	32	32	20	25
100	100	125	80x2	50	32	25	25
125	125	125	80x2	50	32	25	25
150	150	150	100x2	50	50	32	32
175	175	150	125x2	50	50	32	32
200	200	150	125x2	50	50	32	32
225	225	200	125x2	100	50	32	32
250	250	200	125x2	100	50	32	32
300	300	200	150x2	100	50	32	32
350	350	200	150x2	100	50	32	50
400	400	150x2	125x4	50x2	50x2	32x2	32x2
500	500	200x2	125x4	100x2	50x2	32x2	32x2
600	600	200x2	150x4	100x2	50x2	32x2	32x2
700	700	200x2	150x4	100x2	50x2	32x2	32x2
800	800	200x3	150x6	100x3	50x3	32x3	32x3
900	900	200x3	150x6	100x3	50x3	32x3	32x3
1000	1000	200x4	125x8	100x4	50x4	32x4	32x4
1200	1200	200x4	125x8	100x4	50x4	32x4	32x4

Measuring Point



1. Measuring point 1 is horizontal distance "D" equal to the width or length, away from the louvers or casting and 1.5 m. Above the floor level. If "D" is less than 1.5 m., take the distance of 1.5 m.
2. Measuring point 6 is 45o upper distance "Df" equal to the fan diameter, away from the top edge of the fan stack. If "Df" is less than 1.5 m., take the distance of 1.5 m.
3. Measured noise levels should not be affected by surroundings such as echo.
4. Noise levels should be measured based on A scale.

Noise Value

UNIT : dB (A)

MODEL BKC-S (RT)	MEASURING DIRECTION											
	POINT	DISTANCE	POINT	DISTANCE	POINT	DISTANCE	POINT	DISTANCE	POINT	DISTANCE	POINT	DISTANCE
	1	Dm.	2	2m.	3	5m.	4	10m.	5	20m.	6	45o Dfm
	L	W	L	W	L	W	L	W	L	W	L	W
80	53	60	55	56	51	56	46	52	40	46	64	64
100	54	61	56	60	52	57	47	53	41	47	65	65
125	59	66	61	65	57	62	51	58	46	52	70	70
150	58	64	60	64	56	60	50	56	45	51	69	69
175	61	68	63	67	59	64	54	60	48	54	72	72
200	59	65	61	66	58	63	52	58	47	53	71	71
225	57	63	60	64	56	61	51	56	45	51	69	69
250	59	65	62	66	58	63	53	58	47	53	71	71
300	60	65	62	66	58	63	52	58	47	53	69	71
350	63	68	65	69	61	66	55	62	50	56	72	74
400	60	66	63	68	59	65	53	60	48	55	71	73
500	60	66	63	68	59	65	54	60	48	55	71	73
600	61	65	64	69	60	66	54	61	49	56	72	74
700	59	62	62	67	58	64	53	59	47	54	70	72
800	61	64	64	70	60	67	54	62	49	57	73	75
900	59	60	62	68	58	65	53	60	47	55	71	73
1000	61	62	64	70	60	67	55	62	49	57	73	75
1200	62	63	65	71	61	68	56	61	50	58	74	76



Project : Nestle (Vietnam)
Model : BKC-S-1500 RT x 4 Cells



Project : Srithal Superware (Vietnam)
Model : BKC-S-100 RT x 8 Cells



Project : Mega Bangna
Model : BKC-S-400 RT x 2 Cells = 1 Sets
BKC-S-600 RT x 2 Cells = 1 Sets
BKC-S-700 RT x 4 Cells = 4 Sets



Project : Precision Plastic
Model : BKC-S-500 RT x 5 Cells = 7 Sets (35 Cells)



Project : Paolo Memorial Hospital
Model : BKC-S-250 RT = 2 Sets



Project : Thai Product Sugar Mill
Model : BKC-S-100 RT x 4 Cells = 2 Sets



Project : A.I. Energy
Model : BKC-S-400 RT x 2 Cells



Project : Pisan Steel
Model : BKC-S-350 RT x 8 Cells



Project : Hydrotek Co., Ltd
Model : BKC-S-700 RT x 1 Cells
BKC-S-800 RT x 2 Cells
BKC-S-1500 RT x 8 Cells



CERTIFICATE

The Certification Body of TÜV SÜD Asia Pacific TÜV SÜD Group certifies that



B.K.K. Cooling and Engineering Co., Ltd.
47/1 Moo 6 T. Mhon-nang, A. Panasnikom, Chonburi 20140, Thailand
has established and applies a Quality Management System for

Design and Manufacture of Cooling Tower

An audit was performed, Report No. 20041241
Proof has been furnished that the requirements according to

ISO 9001:2008

are fulfilled. The certificate is valid until 2015-02-05
Certificate Registration No. TUV100 11 1235
2012-02-05

Kim Du M
Certification Body of TÜV SÜD Asia Pacific
TÜV SÜD Group




TÜV SÜD Korea Ltd. # 107, YKAF Bldg., 488, Tongdeok, Songpa-gu # 15070 Seoul # Korea



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FIELD-TEST RESULT

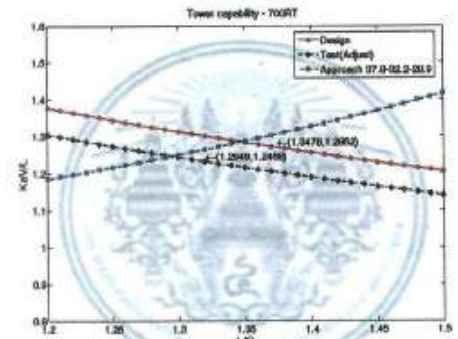


Figure 1 - Capacity task of cooling tower, Model : BKC-S-700RT no. 8/2

From the graph in figure 1, the intersecting point (L/G)_{test} between the test curve and approach line, is 1.2949 and the (L/G)_{design} = 1.3478. Therefore, capacity task of cooling tower can be calculated as

$$\text{Cooling - capacity} = \frac{(L/G)_{\text{test}}}{(L/G)_{\text{design}}} \times 100 = \frac{1.2949}{1.3478} \times 100 = 96.1\%$$

This means that this cooling tower can cool down 96.1% of the design water flow rate if it is operated under the design conditions, range, approach, wet bulb temperature, dry bulb temperature and fan power. Or it can be concluded that, under the design conditions, its cooling capacity is 666.90 tons of refrigeration, 96.1% of 694 tons (design value).

*Note: The test result is only applied to the tested specimen and must be used with the official test report.

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