

Series LBC-T

COUNTER FLOW
COOLING TOWER



LIANG CHI INDUSTRY (THAILAND) CO., LTD.



ISO 9001:2015

GENERAL DESCRIPTION AND FEATURES

DESIGN FEATURES :

The all-Fiberglass Reinforced Polyester casing is circular shaped thus eliminating special positioning requirements and is not affected by prevailing wind directions. It further permits quick and easy installation due to light-weight and compactness. Site assembly is simplified by the modular design of components.

GENERAL DESCRIPTION :

Casing

Liang Chi **Model LBC-T** of Fiberglass Reinforced Polyester cooling towers have been designed for durability

Fan Drive

Model LBC-T 200 downwards have direct driven fans. **Model LBC-T 225** upwards feature a unique belt drive to avoid excessive noise.

Fan Blade

Aero - dynamically designed propeller fans at low speed are used to save on power consumption and to assure quiet operation.

Model LBC-T-3 to **30** feature special reinforced plastic fans.

Model LBC-T-40 upwards feature aluminium alloy fans.

Water Distribution

A highly efficient rotating sprinkler head system in reinforced plastic is used for the smaller range of towers **Model LBC-T-3** to **60** From **Model LBC-T-70** upwards, the aluminium alloy sprinkler system is incorporated. Both sprinkler systems are self-rotating at low head loss.

Eliminators

Eliminators are of special F.R.P. design to reduce carryover to the barest minimum. (for **LBC-T-30** & upwards)

Filling

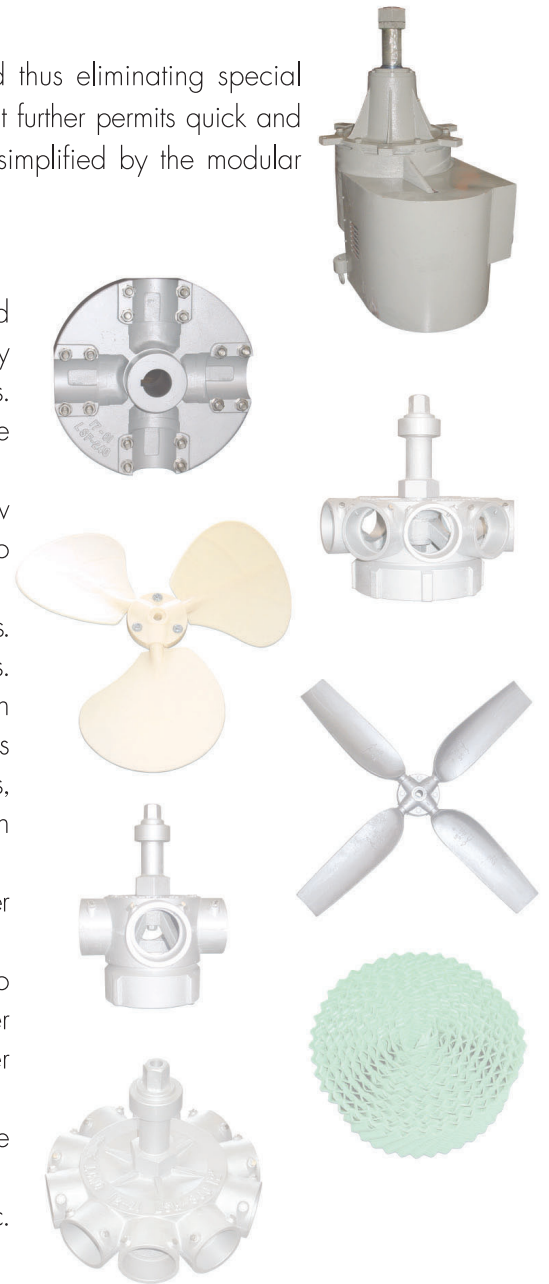
The filling is made of P.V.C. sheet laid in a ring form to enable easy replacement, having a high heat transfer efficiency. It is suitable for operation with inlet water temperature up to 55 C. or 130 F.

Intet Louver

P.V.C. plastic mesh to prevent objects entering the water basin.

Ladder

Accessibility for maintenance to operating fan unit etc. (for **LBC-T-40** & upwards)



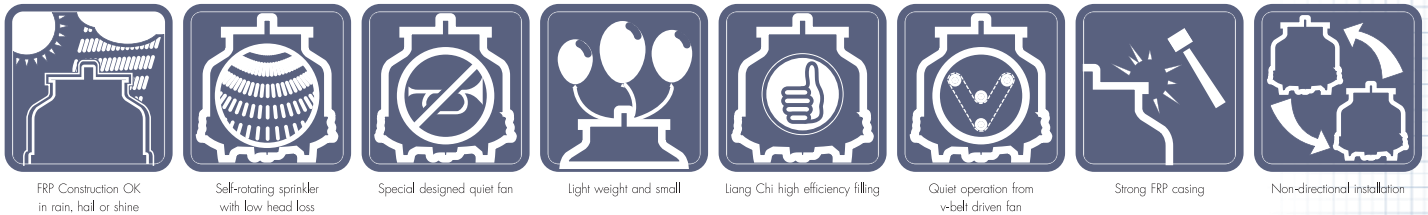
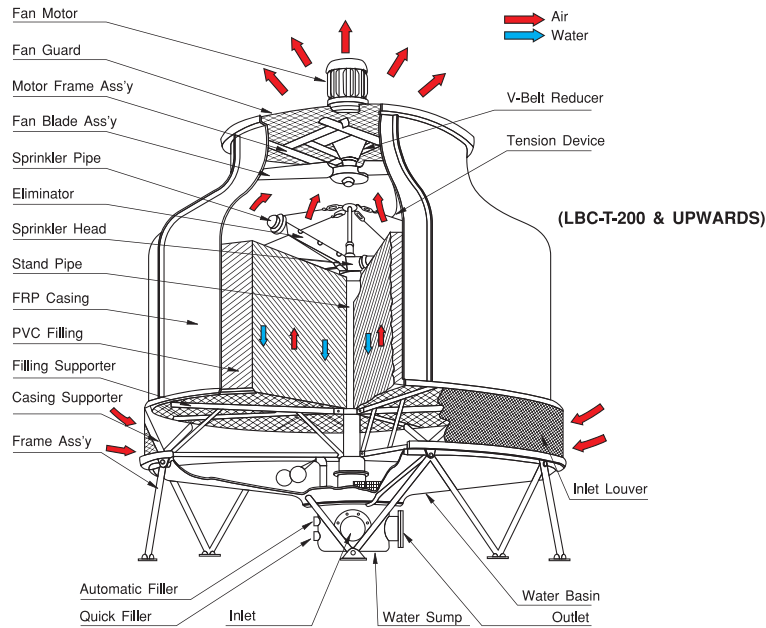
REQUEST WHEN MAKING INQUIRES

WHEN MAKING INQUIRIES, PLEASE SUPPLY INFORMATION ON THE FOLLOWING:

1. Circulating Water Flow Rate.
2. Outlet temperature.
3. Inlet temperature.
4. Atmospheric Wet Bulb Temperature.
5. Electrical Voltage and Frequency.
6. Site Conditions and Area Size.
7. Water Quality.



CONSTRUCTION AND INSTALLATION DATA

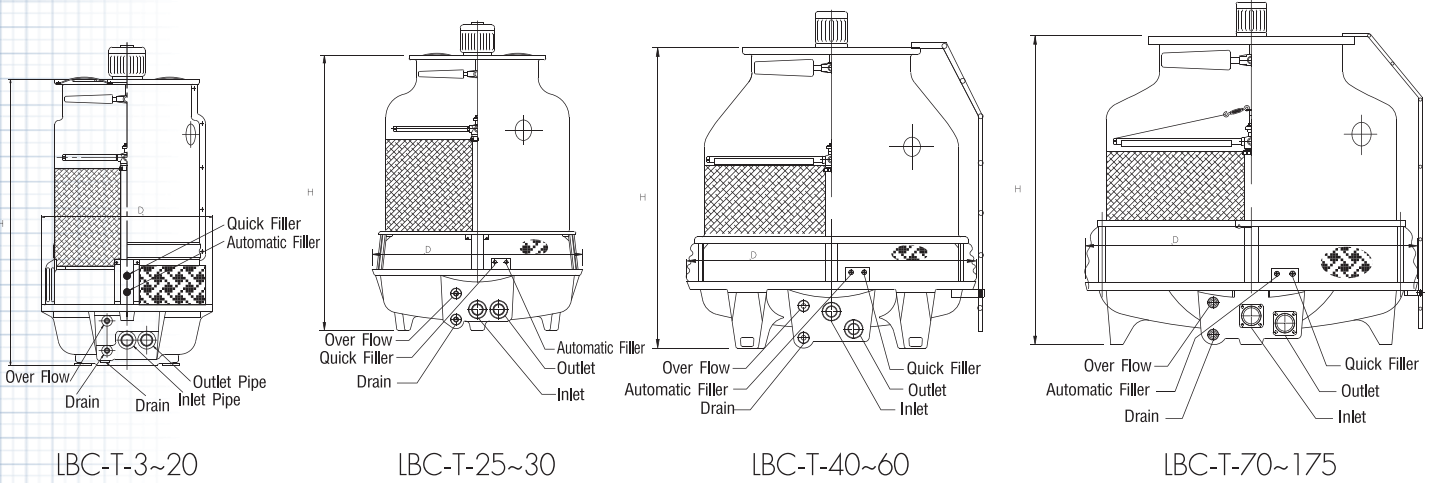


STANDARD MATERIALS

| Model LBC-T | 3 | 10 | 30 | 40 | 60 | 70 | 175 | 200 | 250 | 400 | 600 | 1000~ 1500 |
|----------------|---|----|----|--------------------------|----|----|---------------|-----|-----|-----|-----|---------------|
| Fan Motor | 220, 346, 386, 415V, 3Ph, 50Hz/ 60Hz (others available) | | | | | | | | | | | |
| Fan Drive | Direct | | | | | | Speed Reducer | | | | | |
| Fan Blade | Reinforeed Plastic | | | Aluminium Alloy | | | | | | | | |
| Casing | F.R.P. | | | | | | | | | | | |
| Eliminator | Not fitted | | | F.R.P. | | | | | | | | |
| Sprinkler Head | Reinforeed Plastic | | | Aluminium Alloy | | | | | | | | |
| Filling | Corrugated & Embossed P.V.C. R-Packing | | | | | | | | | | | |
| Inlet Louver | P.V.C. Banmesh Louver | | | | | | | | | | | |
| Float Valve | Single Valve | | | | | | | | | | | |
| Ladder | Not fitted | | | Hot Dip Galvanized Steel | | | | | | | | |
| Sump | Not fitted | | | | | | F.R.P. | | | | | |
| Frame Ass'y | Not fitted | | | Hot Dip Galvanized Steel | | | | | | | | |

LBC-T 3~1500

DIMENSION TABLE & PIPE CONNECTION

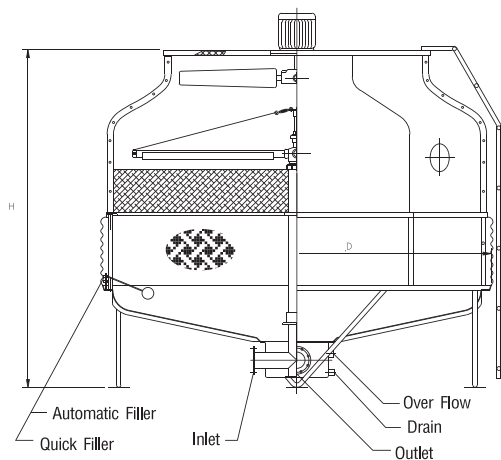


| Tower Model LBC-T | Dimension mm (inch) | | | | Pipe Connection mm (inch) | | | | | | | |
|----------------------|---------------------|---------|------|---------|---------------------------|-------|-------|-------|-----------|---|-------|-----|
| | H | | D | | OUTLET | | INLET | | OVER FLOW | | DRAIN | |
| 3 | 1400 | 55 1/8 | 750 | 29 1/2 | 40 | 1 1/2 | 40 | 1 1/2 | 25 | 1 | 20 | 3/4 |
| 5 | 1400 | 55 1/8 | 750 | 29 1/2 | 40 | 1 1/2 | 40 | 1 1/2 | 25 | 1 | 20 | 3/4 |
| 8 | 1680 | 66 1/8 | 860 | 33 7/8 | 40 | 1 1/2 | 40 | 1 1/2 | 25 | 1 | 25 | 1 |
| 10 | 1680 | 66 1/8 | 860 | 33 7/8 | 40 | 1 1/2 | 40 | 1 1/2 | 25 | 1 | 25 | 1 |
| 15 | 1930 | 76 | 1170 | 46 | 50 | 2 | 50 | 2 | 25 | 1 | 25 | 1 |
| 20 | 1930 | 76 | 1170 | 46 | 50 | 2 | 50 | 2 | 25 | 1 | 25 | 1 |
| 25 | 1800 | 70 7/8 | 1380 | 54 3/8 | 65 | 2 1/2 | 65 | 2 1/2 | 25 | 1 | 50 | 2 |
| 30 | 1735 | 68 1/4 | 1580 | 62 1/4 | 65 | 2 1/2 | 65 | 2 1/2 | 25 | 1 | 50 | 2 |
| 40 | 1890 | 74 1/2 | 1820 | 71 5/8 | 65 | 2 1/2 | 65 | 2 1/2 | 25 | 1 | 50 | 2 |
| 50 | 1890 | 74 1/2 | 2000 | 78 3/4 | 80 | 3 | 80 | 3 | 25 | 1 | 50 | 2 |
| 60 | 1895 | 74 1/2 | 2000 | 78 3/4 | 80 | 3 | 80 | 3 | 25 | 1 | 50 | 2 |
| 70 | 2015 | 79 1/2 | 2175 | 85 5/8 | 100 | 4 | 100 | 4 | 25 | 1 | 50 | 2 |
| 80 | 2015 | 79 1/2 | 2175 | 85 5/8 | 100 | 4 | 100 | 4 | 25 | 1 | 50 | 2 |
| 100 | 2160 | 85 | 2650 | 104 3/8 | 100 | 4 | 100 | 4 | 25 | 1 | 50 | 2 |
| 125 | 2210 | 87 | 3050 | 120 | 125 | 5 | 125 | 5 | 50 | 2 | 50 | 2 |
| *150 | 2285 | 90 | 3300 | 130 | 125 | 5 | 125 | 5 | 50 | 2 | 50 | 2 |
| *175 | 2485 | 97 3/4 | 3300 | 130 | 125 | 5 | 125 | 5 | 50 | 2 | 50 | 2 |
| *200 | 2990 | 117 3/4 | 3770 | 148 2/5 | 150 | 6 | 150 | 6 | 50 | 2 | 50 | 2 |
| *225 | 3190 | 125 5/8 | 3770 | 148 2/5 | 150 | 6 | 150 | 6 | 50 | 2 | 50 | 2 |
| *250 | 3190 | 125 5/8 | 3770 | 148 2/5 | 200 | 8 | 200 | 8 | 50 | 2 | 50 | 2 |
| *300 | 3350 | 131 7/8 | 4440 | 174 3/4 | 200 | 8 | 200 | 8 | 50 | 2 | 50 | 2 |
| *350 | 3390 | 133 1/2 | 4790 | 188 5/8 | 200 | 8 | 200 | 8 | 50 | 2 | 50 | 2 |
| 400 | 3890 | 153 1/8 | 5180 | 203 7/8 | 200 | 8 | 200 | 8 | 100 | 4 | 50 | 2 |
| 500 | 3980 | 156 3/4 | 5580 | 219 5/8 | 250 | 10 | 250 | 10 | 100 | 4 | 50 | 2 |
| 600 | 4340 | 170 7/8 | 6600 | 259 7/8 | 250 | 10 | 250 | 10 | 100 | 4 | 50 | 2 |
| 700 | 4380 | 172 1/2 | 6600 | 259 7/8 | 250 | 10 | 250 | 10 | 100 | 4 | 50 | 2 |
| 800 | 4930 | 194 1/8 | 7600 | 299 1/4 | 300 | 12 | 300 | 12 | 100 | 4 | 80 | 3 |
| 1000 | 5145 | 202 1/2 | 7600 | 299 1/4 | 300 | 12 | 300 | 12 | 100 | 4 | 80 | 3 |
| 1250 | 5870 | 231 | 8430 | 331 7/8 | 300 | 12 | 300 | 12 | 100 | 4 | 80 | 3 |
| 1500 | 6220 | 244 7/8 | 8430 | 331 7/8 | 300 | 12 | 300 | 12 | 100 | 4 | 80 | 3 |

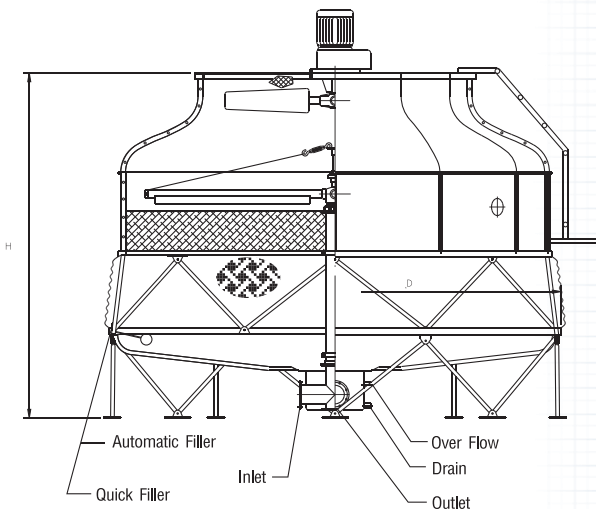
*1. Total pump head required cooling water circulation pump is the sum of condenser water pressure drop, piping friction loss and tower head.

*2. Nominal Tons are defined as 13 L/ MIN/RT (3.43 USGPM/Ton), cooled from 37 °C to 32 °C with 27 °C wet bulb temperature.

*AU - Automatic Filler, QU - Quick Filler



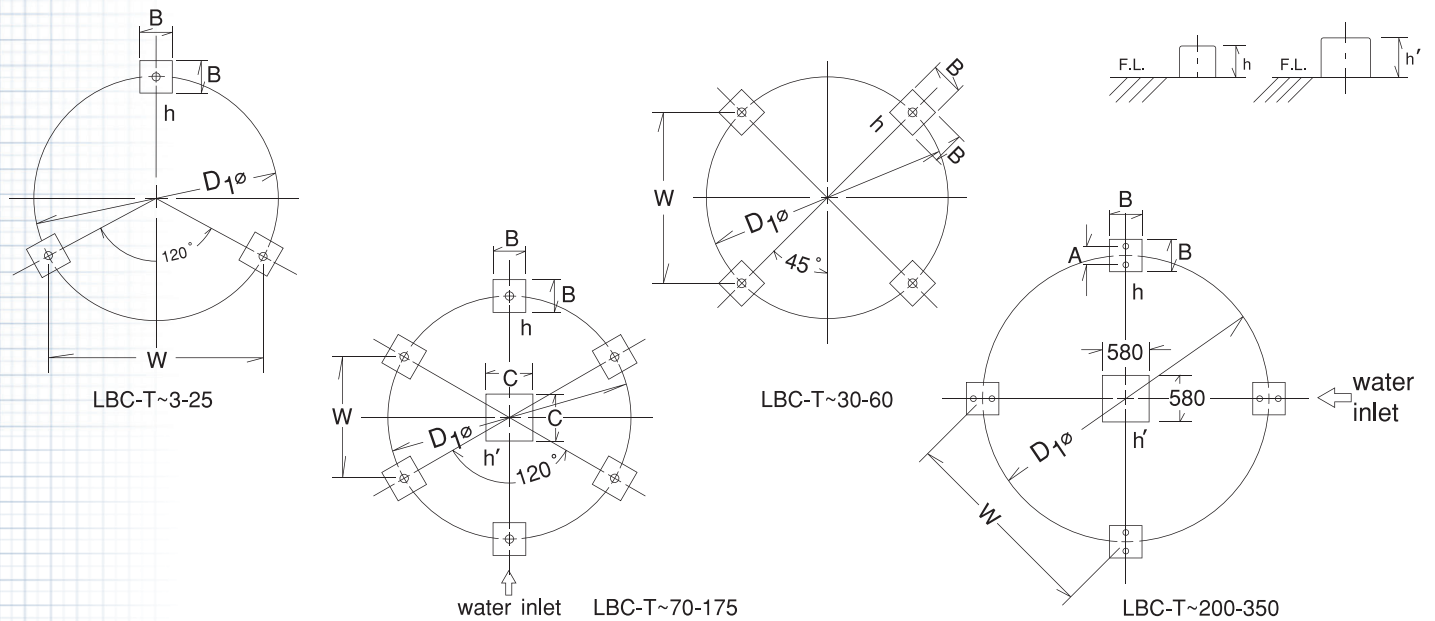
LBC-T-200~350



LBC-T-400~1500

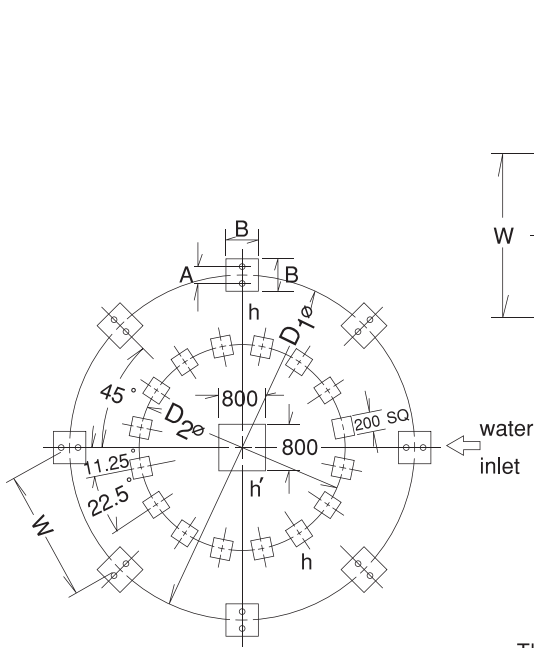
| Pipe Connection mm (inch) | | | | Fan Motor H.P. | Fan Dia. mm (inch) | | Air Volume m ³ /m (CFM) | | Nominal Water Flow L/M (USGPM) | |
|---------------------------|--------------|----|-------|----------------|--------------------|--------|------------------------------------|--------|--------------------------------|------|
| AUTO. FILLER | QUICK FILLER | | | | | | | | | |
| 15 | 1/2 | 15 | 1/2 | 1/6 | 500 | 19 1/2 | 25 | 870 | 39 | 10.3 |
| 15 | 1/2 | 15 | 1/2 | 1/6 | 500 | 19 1/2 | 60 | 2100 | 65 | 17.2 |
| 15 | 1/2 | 15 | 1/2 | 1/6 | 500 | 19 1/2 | 75 | 2620 | 104 | 27.5 |
| 15 | 1/2 | 15 | 1/2 | 1/4 | 500 | 19 1/2 | 100 | 3500 | 130 | 34.3 |
| 15 | 1/2 | 15 | 1/2 | 1/4 | 670 | 26 3/8 | 135 | 4700 | 195 | 51.5 |
| 15 | 1/2 | 15 | 1/2 | 1/2 | 670 | 26 3/8 | 180 | 6300 | 260 | 68.7 |
| 15 | 1/2 | 15 | 1/2 | 3/4 | 770 | 30 1/4 | 200 | 7000 | 325 | 85.8 |
| 15 | 1/2 | 15 | 1/2 | 1 | 770 | 30 1/4 | 225 | 7900 | 390 | 103 |
| 20 | 3/4 | 20 | 3/4 | 2 | 970 | 38 1/4 | 280 | 9800 | 520 | 137 |
| 20 | 3/4 | 20 | 3/4 | 2 | 970 | 38 1/4 | 330 | 11550 | 650 | 172 |
| 20 | 3/4 | 20 | 3/4 | 2 | 1170 | 46 | 420 | 14700 | 780 | 206 |
| 20 | 3/4 | 20 | 1 | 2 | 1170 | 46 | 500 | 17500 | 910 | 240 |
| 20 | 3/4 | 20 | 1 | 2 | 1170 | 46 | 540 | 18900 | 1040 | 275 |
| 25 | 1 | 25 | 1 | 3 | 1470 | 57 7/8 | 700 | 24500 | 1300 | 343 |
| 25 | 1 | 25 | 1 | 3 | 1470 | 57 7/8 | 830 | 29050 | 1625 | 429 |
| 25 | 1 | 25 | 1 | 5 | 1750 | 68 7/8 | 950 | 33250 | 1950 | 515 |
| 25 | 1 | 25 | 1 | 5 | 1750 | 68 7/8 | 1150 | 40250 | 2275 | 601 |
| 32 | 1 1/4 | 32 | 1 1/4 | 5 | 1750 | 68 7/8 | 1250 | 43750 | 2600 | 687 |
| 32 | 1 1/4 | 32 | 1 1/4 | 7 1/2 | 2360 | 93 | 1750 | 61250 | 2925 | 773 |
| 32 | 1 1/4 | 32 | 1 1/4 | 7 1/2 | 2360 | 93 | 1750 | 61250 | 3250 | 859 |
| 32 | 1 1/4 | 32 | 1 1/4 | 10 | 2360 | 93 | 2200 | 77000 | 3900 | 1030 |
| 32 | 1 1/4 | 32 | 1 1/4 | 10 | 2360 | 93 | 2200 | 77000 | 4550 | 1202 |
| 50 | 2 | 50 | 2 | 15 | 2970 | 117 | 2600 | 91000 | 5200 | 1374 |
| 50 | 2 | 50 | 2 | 15 | 2970 | 117 | 2600 | 91000 | 6500 | 1717 |
| 50 | 2 | 50 | 2 | 20 | 3380 | 133 | 3750 | 131250 | 7800 | 2060 |
| 50 | 2 | 50 | 2 | 20 | 3380 | 133 | 3750 | 131250 | 9100 | 2404 |
| 50 | 2 | 50 | 2 | 30 | 3580 | 141 | 5000 | 175000 | 10400 | 2747 |
| 50 | 2 | 50 | 2 | 30 | 3580 | 141 | 5000 | 175000 | 13000 | 3430 |
| 65 | 2 1/2 | 65 | 2 1/2 | 40 | 4270 | 168 | 6200 | 217000 | 16250 | 4293 |
| 65 | 2 1/2 | 65 | 2 1/2 | 50 | 4270 | 168 | 7500 | 262500 | 19500 | 5152 |

RECOMMENDED CONCRETE BASE OF TOWER SUPPORT STAND

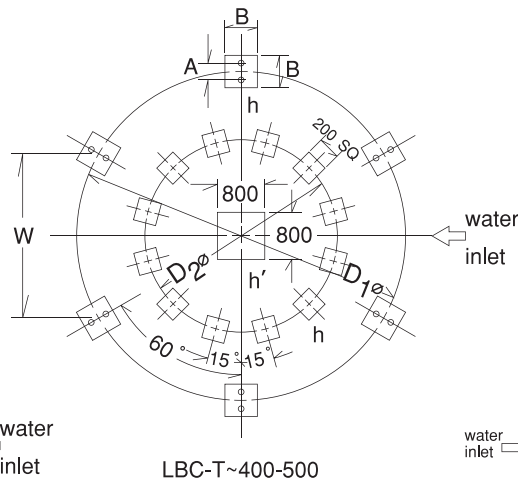


| Tower Model LBC-T | Tower Head m (ft) *1 | | Nom. Tons *2 | Approx. Wt : kg | | D1 mm (inch) | | W mm (inch) | | D2 mm (inch) | |
|----------------------|----------------------------|------|-----------------|-----------------|-----------|-----------------|---------|----------------|---------|-----------------|---------|
| | | | | Dry | Operating | | | | | | |
| 3 | 1.5 | 5 | 3 | 36 | 82 | 550 | 21 3/4 | 476 | 18 3/4 | | |
| 5 | 1.5 | 5 | 5 | 40 | 115 | 550 | 21 3/4 | 476 | 18 3/4 | | |
| 8 | 1.7 | 5.6 | 8 | 50 | 127 | 650 | 25 1/2 | 563 | 22 1/8 | | |
| 10 | 1.7 | 5.6 | 10 | 55 | 200 | 650 | 25 1/2 | 563 | 22 1/8 | | |
| 15 | 2 | 6.6 | 15 | 80 | 260 | 950 | 37 3/8 | 823 | 32 3/8 | | |
| 20 | 2 | 6.6 | 20 | 90 | 330 | 950 | 37 3/8 | 823 | 32 3/8 | | |
| 25 | 1.7 | 5.6 | 25 | 103 | 403 | 1120 | 44 | 970 | 38 1/4 | | |
| 30 | 1.8 | 6 | 30 | 115 | 488 | 1330 | 52 1/2 | 940 | 37 | | |
| 40 | 2 | 6.6 | 40 | 168 | 515 | 1470 | 57 5/8 | 1039 | 40 5/8 | | |
| 50 | 2 | 6.6 | 50 | 197 | 597 | 1680 | 66 1/8 | 1188 | 46 3/4 | | |
| 60 | 2 | 6.6 | 60 | 229 | 669 | 1680 | 66 1/8 | 1188 | 46 3/4 | | |
| 70 | 2 | 6.6 | 70 | 277 | 707 | 1760 | 69 3/8 | 880 | 34 5/8 | | |
| 80 | 2 | 6.6 | 80 | 292 | 722 | 1760 | 69 3/8 | 880 | 34 5/8 | | |
| 100 | 2.5 | 8.2 | 100 | 403 | 1073 | 2350 | 92 1/2 | 1175 | 46 1/4 | | |
| 125 | 3 | 10 | 125 | 466 | 1356 | 2620 | 103 1/8 | 1310 | 51 1/2 | | |
| 150 | 3 | 10 | 150 | 625 | 2605 | 2860 | 112 1/2 | 1430 | 56 1/4 | | |
| 175 | 3.2 | 11 | 175 | 713 | 2676 | 2860 | 112 1/2 | 1430 | 56 1/4 | | |
| 200 | 3.2 | 11 | 200 | 870 | 3460 | 3354 | 132 | 2372 | 93 3/8 | | |
| 225 | 3.2 | 11 | 225 | 960 | 3520 | 3354 | 132 | 2372 | 93 3/8 | | |
| 250 | 3.6 | 12 | 250 | 1030 | 3570 | 3354 | 132 | 2372 | 93 3/8 | | |
| 300 | 3.6 | 12 | 300 | 1283 | 4543 | 3964 | 156 1/8 | 2803 | 110 3/8 | | |
| 350 | 4 | 13.2 | 350 | 1362 | 4620 | 4297 | 169 1/8 | 3039 | 119 5/8 | | |
| 400 | 4 | 13.2 | 400 | 2171 | 6811 | 5100 | 200 3/4 | 2550 | 100 3/8 | 2900 | 114 1/4 |
| 500 | 4 | 13.2 | 500 | 2428 | 7068 | 5500 | 216 1/2 | 2750 | 108 1/4 | 3100 | 122 |
| 600 | 5 | 16.5 | 600 | 3364 | 10774 | 6480 | 255 1/8 | 2480 | 97 5/8 | 3600 | 141 3/4 |
| 700 | 5.5 | 18 | 700 | 3567 | 10967 | 6480 | 255 1/8 | 2480 | 97 5/8 | 3600 | 141 3/4 |
| 800 | 6 | 20 | 800 | 4380 | 11980 | 7500 | 295 1/4 | 2870 | 113 | 4155 | 163 1/2 |
| 1000 | 6 | 20 | 1000 | 4636 | 12436 | 7500 | 295 1/4 | 2870 | 113 | 4155 | 163 1/2 |
| 1250 | 6.5 | 21.5 | 1250 | 6554 | 26064 | 8330 | 328 | 2574 | 101 3/8 | 6400 | 252 |
| 1500 | 7 | 23 | 1500 | 7000 | 26512 | 8330 | 328 | 2574 | 101 3/8 | 6400 | 252 |

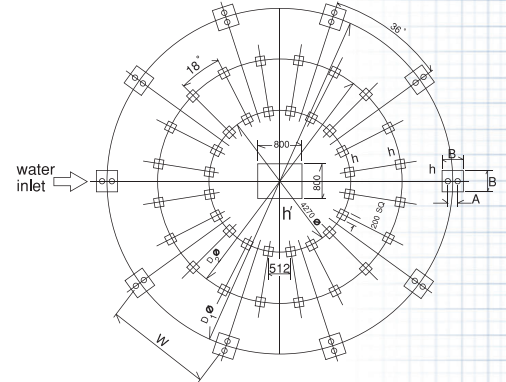
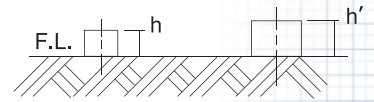
* We reserve the right to make change in the specifications and dimensions please contact our agent for latest data.



LBC-T~600-1000



LBC-T~400-500



LBC-T~1250-1500

The Basin Supportor should be omitted if which is interrupted by any water piping

| A mm (inch) | B mm (inch) | | C mm (inch) | | h mm (inch) | | h' mm (inch) | | Anchor Bolt | | | | | |
|----------------|----------------|-----|----------------|-----|----------------|-----|-----------------|-----|-------------------|---------------------|------------|-----|-----|----|
| | | | | | | | | | Size mm (inch) | Length mm (inch) | Qty Pcs | | | |
| | | 200 | 8 | | | 150 | 6 | | M12 | 120 | 4 | 3/4 | 3 | |
| | | 200 | 8 | | | 150 | 6 | | M12 | 120 | 4 | 3/4 | 3 | |
| | | 200 | 8 | | | 150 | 6 | | M12 | 120 | 4 | 3/4 | 3 | |
| | | 200 | 8 | | | 150 | 6 | | M12 | 120 | 4 | 3/4 | 3 | |
| | | 200 | 8 | | | 150 | 6 | | M12 | 120 | 4 | 3/4 | 3 | |
| | | 200 | 8 | | | 150 | 6 | | M12 | 120 | 4 | 3/4 | 3 | |
| | | 200 | 8 | | | 150 | 6 | | M12 | 120 | 4 | 3/4 | 3 | |
| | | 200 | 8 | | | 150 | 6 | | M12 | 120 | 4 | 3/4 | 4 | |
| | | 250 | 10 | | | 200 | 8 | | M12 | 120 | 4 | 3/4 | 4 | |
| | | 250 | 10 | | | 200 | 8 | | M12 | 120 | 4 | 3/4 | 4 | |
| | | 250 | 10 | | | 200 | 8 | | M12 | 120 | 4 | 3/4 | 4 | |
| | | 250 | 10 | 250 | 10 | 200 | 8 | 300 | 12 | M12 | 120 | 4 | 3/4 | 5 |
| | | 250 | 10 | 250 | 10 | 200 | 8 | 300 | 12 | M12 | 120 | 4 | 3/4 | 5 |
| | | 300 | 12 | 300 | 12 | 300 | 12 | 400 | 15 3/4 | M16 | 200 | 8 | 8 | 5 |
| | | 300 | 12 | 300 | 12 | 300 | 12 | 400 | 15 3/4 | M16 | 200 | 8 | 8 | 5 |
| | | 300 | 12 | 400 | 15 3/4 | 300 | 12 | 400 | 15 3/4 | M16 | 200 | 8 | 8 | 5 |
| | | 300 | 12 | 400 | 15 3/4 | 300 | 12 | 400 | 15 3/4 | M16 | 200 | 8 | 8 | 5 |
| 130 | 5 | 300 | 12 | | | 300 | 12 | 400 | 15 3/4 | M16 | 200 | 8 | 8 | 8 |
| 130 | 5 | 300 | 12 | | | 300 | 12 | 400 | 15 3/4 | M16 | 200 | 8 | 8 | 8 |
| 130 | 5 | 300 | 12 | | | 300 | 12 | 400 | 15 3/4 | M16 | 200 | 8 | 8 | 8 |
| 140 | 5 1/2 | 300 | 12 | | | 300 | 12 | 400 | 15 3/4 | M16 | 200 | 8 | 8 | 8 |
| 140 | 5 1/2 | 300 | 12 | | | 300 | 12 | 400 | 15 3/4 | M16 | 200 | 8 | 8 | 8 |
| 140 | 5 1/2 | 500 | 20 | | | 300 | 12 | 400 | 15 3/4 | M20 | 200 | 8 | 12 | 12 |
| 140 | 5 1/2 | 500 | 20 | | | 300 | 12 | 400 | 15 3/4 | M20 | 200 | 8 | 12 | 12 |
| 140 | 5 1/2 | 500 | 20 | | | 300 | 12 | 400 | 15 3/4 | M20 | 200 | 8 | 16 | 16 |
| 140 | 5 1/2 | 500 | 20 | | | 300 | 12 | 400 | 15 3/4 | M20 | 200 | 8 | 16 | 16 |
| 140 | 5 1/2 | 500 | 20 | | | 300 | 12 | 400 | 15 3/4 | M20 | 200 | 8 | 16 | 16 |
| 140 | 5 1/2 | 500 | 20 | | | 300 | 12 | 400 | 15 3/4 | M20 | 200 | 8 | 20 | 20 |
| 140 | 5 1/2 | 500 | 20 | | | 300 | 12 | 400 | 15 3/4 | M20 | 200 | 8 | 20 | 20 |

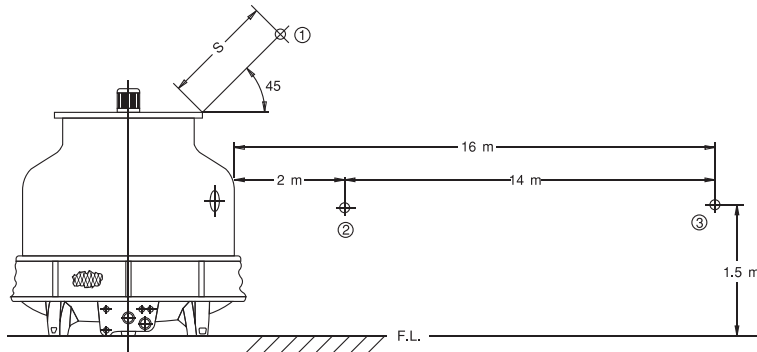
WATER QUANTITY LIMIT SELECTION CHART

(unit) : lit/min

| AMBIENT WET BULB RANGE °C | 27°C | | | 28°C | | | | | | | | | | | | | | | | | | 29°C | | | | | | |
|---------------------------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 15°C | 18°C | | 5°C | | | 6°C | | | 7°C | | | 8°C | | | 9°C | | | 10°C | | | 11°C | | | 5°C | | | |
| °C | 50 | 45 | 50 | 39 | 38 | 37 | 40 | 39 | 38 | 41 | 40 | 39 | 42 | 41 | 40 | 43 | 42 | 41 | 45 | 44 | 43 | 42 | 45 | 44 | 43 | 39 | 38 | 37 |
| LBC-T | 35 | 30 | 32 | 34 | 33 | 32 | 34 | 33 | 32 | 34 | 33 | 32 | 34 | 33 | 32 | 34 | 33 | 32 | 35 | 34 | 33 | 32 | 34 | 33 | 32 | 34 | 33 | 32 |
| 3 | 27 | | | 39 | 39 | 33 | 39 | 36 | 29 | 39 | 32 | 26 | 35 | 30 | 23 | 32 | 27 | 22 | 36 | 30 | 25 | 20 | 28 | 24 | 19 | 39 | 35 | 27 |
| 5 | 41 | | | 65 | 65 | 54 | 65 | 60 | 46 | 64 | 52 | 41 | 57 | 47 | 37 | 52 | 43 | 34 | 58 | 48 | 39 | 31 | 45 | 37 | 29 | 65 | 58 | 43 |
| 8 | 71 | 33 | 43 | 104 | 104 | 87 | 104 | 95 | 75 | 103 | 84 | 67 | 93 | 76 | 63 | 85 | 70 | 56 | 94 | 79 | 65 | 52 | 74 | 61 | 49 | 104 | 93 | 70 |
| 10 | 85 | 42 | 55 | 130 | 130 | 107 | 130 | 117 | 92 | 127 | 103 | 82 | 114 | 93 | 74 | 104 | 86 | 68 | 115 | 97 | 80 | 64 | 91 | 75 | 60 | 130 | 114 | 85 |
| 15 | 130 | 66 | 79 | 195 | 195 | 164 | 195 | 179 | 142 | 194 | 159 | 127 | 178 | 144 | 115 | 161 | 133 | 106 | 177 | 149 | 123 | 99 | 140 | 116 | 94 | 195 | 175 | 132 |
| 20 | 172 | 95 | 118 | 260 | 260 | 219 | 260 | 239 | 190 | 258 | 212 | 169 | 238 | 192 | 154 | 214 | 177 | 142 | 236 | 199 | 165 | 132 | 187 | 155 | 125 | 260 | 233 | 176 |
| 25 | 221 | 113 | 142 | 325 | 325 | 275 | 325 | 300 | 240 | 324 | 268 | 215 | 294 | 244 | 197 | 271 | 225 | 182 | 298 | 253 | 210 | 171 | 238 | 198 | 161 | 325 | 293 | 223 |
| 30 | 270 | 130 | 166 | 390 | 390 | 332 | 390 | 361 | 291 | 389 | 323 | 261 | 354 | 295 | 243 | 328 | 273 | 222 | 359 | 306 | 256 | 209 | 289 | 242 | 197 | 390 | 353 | 270 |
| 40 | 365 | 190 | 235 | 520 | 520 | 445 | 520 | 483 | 391 | 520 | 435 | 353 | 475 | 398 | 324 | 441 | 370 | 302 | 483 | 413 | 347 | 284 | 390 | 328 | 270 | 520 | 472 | 365 |
| 50 | 480 | 250 | 310 | 650 | 650 | 559 | 650 | 606 | 494 | 650 | 547 | 447 | 598 | 503 | 412 | 556 | 468 | 385 | 608 | 522 | 441 | 363 | 495 | 418 | 345 | 650 | 592 | 461 |
| 60 | 580 | 300 | 375 | 780 | 780 | 667 | 780 | 725 | 587 | 780 | 652 | 530 | 713 | 597 | 487 | 661 | 555 | 453 | 724 | 620 | 521 | 426 | 586 | 493 | 404 | 780 | 708 | 547 |
| 70 | 690 | 370 | 460 | 910 | 910 | 777 | 910 | 845 | 683 | 910 | 759 | 615 | 831 | 694 | 565 | 769 | 644 | 526 | 852 | 720 | 604 | 494 | 680 | 572 | 468 | 910 | 825 | 636 |
| 80 | 800 | 440 | 545 | 1040 | 1040 | 892 | 1040 | 968 | 787 | 1040 | 873 | 712 | 954 | 801 | 655 | 886 | 745 | 611 | 969 | 832 | 701 | 576 | 787 | 664 | 547 | 1040 | 946 | 734 |
| 100 | 970 | 505 | 630 | 1300 | 1300 | 1112 | 1300 | 1208 | 978 | 1300 | 1086 | 883 | 1189 | 995 | 811 | 1102 | 924 | 755 | 1207 | 1033 | 868 | 711 | 976 | 821 | 674 | 1300 | 1180 | 912 |
| 125 | 1200 | 630 | 775 | 1625 | 1625 | 1396 | 1625 | 1515 | 1233 | 1625 | 1367 | 1118 | 1494 | 1256 | 1028 | 1388 | 1169 | 960 | 1518 | 1304 | 1100 | 905 | 1235 | 1043 | 860 | 1625 | 1480 | 1151 |
| 150 | 1450 | 770 | 945 | 1950 | 1950 | 1687 | 1950 | 1827 | 1500 | 1950 | 1658 | 1366 | 1808 | 1530 | 1264 | 1687 | 1431 | 1184 | 1862 | 1591 | 1351 | 1120 | 1511 | 1285 | 1068 | 1950 | 1786 | 1404 |
| 175 | 1700 | 900 | 1110 | 2275 | 2275 | 1956 | 2275 | 2122 | 1729 | 2275 | 1916 | 1567 | 2093 | 1761 | 1444 | 1946 | 1641 | 1350 | 2128 | 1829 | 1544 | 1272 | 1733 | 1465 | 1209 | 2275 | 2074 | 1651 |
| 200 | 1930 | 1020 | 1260 | 2600 | 2600 | 2245 | 2600 | 2433 | 1993 | 2600 | 2206 | 1812 | 2406 | 2033 | 1675 | 2242 | 1898 | 1568 | 2448 | 2112 | 1790 | 1482 | 2005 | 1702 | 1411 | 2600 | 2378 | 1864 |
| 225 | 2060 | 1060 | 1320 | 2925 | 2925 | 2473 | 2925 | 2696 | 2154 | 2910 | 2403 | 1927 | 2639 | 2198 | 1759 | 2430 | 2016 | 1628 | 2671 | 2264 | 1882 | 1524 | 2129 | 1773 | 1439 | 2925 | 2632 | 1999 |
| 250 | 2430 | 1280 | 1560 | 3250 | 3250 | 2780 | 3250 | 3020 | 2446 | 3250 | 2716 | 2207 | 2972 | 2488 | 2028 | 2755 | 2310 | 1888 | 3017 | 2582 | 2169 | 1776 | 2440 | 2053 | 1685 | 3250 | 2951 | 2279 |
| 300 | 2830 | 1450 | 1800 | 3900 | 3900 | 3328 | 3900 | 3619 | 2923 | 3898 | 3249 | 2633 | 3557 | 2971 | 2416 | 3293 | 2756 | 2247 | 3609 | 3083 | 2584 | 2112 | 2911 | 2444 | 2001 | 3900 | 3535 | 2722 |
| 350 | 3430 | 1810 | 2220 | 4550 | 4550 | 3932 | 4550 | 4256 | 3485 | 4550 | 3855 | 3167 | 4235 | 3553 | 2926 | 3920 | 3320 | 2739 | 4281 | 3691 | 3128 | 2588 | 3504 | 2973 | 2464 | 4550 | 4161 | 3259 |
| 400 | 4100 | 2200 | 2700 | 5200 | 5200 | 4500 | 5200 | 4873 | 4002 | 5200 | 4422 | 3643 | 4822 | 4082 | 3372 | 4500 | 3817 | 3160 | 4959 | 4243 | 3604 | 2993 | 4032 | 3429 | 2849 | 5200 | 4769 | 3745 |
| 500 | 5300 | 2850 | 3500 | 6500 | 6500 | 5728 | 6500 | 6175 | 5183 | 6500 | 5686 | 4790 | 6166 | 5316 | 4487 | 5820 | 5026 | 4251 | 6317 | 5543 | 4792 | 4060 | 5314 | 4600 | 3902 | 6500 | 6046 | 4884 |
| 600 | 5950 | 3100 | 3870 | 7800 | 7800 | 6736 | 7800 | 7299 | 5980 | 7800 | 6619 | 5436 | 7219 | 6098 | 5025 | 6727 | 5694 | 4704 | 7344 | 6335 | 5371 | 4446 | 6015 | 5106 | 4234 | 7800 | 7135 | 5593 |
| 700 | 7300 | 3900 | 4800 | 9100 | 9100 | 7983 | 9100 | 8615 | 7192 | 9100 | 7904 | 6618 | 8582 | 7365 | 6182 | 8077 | 6943 | 5840 | 8845 | 7672 | 6603 | 5564 | 7339 | 6324 | 5336 | 9100 | 8428 | 6765 |
| 800 | 7900 | 4200 | 5150 | 10400 | 10400 | 8982 | 10400 | 9733 | 7973 | 10400 | 8825 | 7248 | 9625 | 8130 | 6700 | 8969 | 7592 | 6272 | 9792 | 8447 | 7161 | 5928 | 8020 | 6809 | 5645 | 10400 | 9514 | 7457 |
| 1000 | 10750 | 5900 | 7250 | 13000 | 13000 | 11528 | 13000 | 12409 | 10496 | 13000 | 11487 | 9746 | 12435 | 10789 | 9177 | 11785 | 10241 | 8728 | 12769 | 11264 | 9800 | 8366 | 10835 | 9438 | 8067 | 13000 | 12145 | 9914 |
| 1250 | 14443 | 7072 | 9395 | 16250 | 16250 | 14461 | 16250 | 15498 | 13092 | 16250 | 14333 | 12145 | 15521 | 13451 | 11425 | 14699 | 12759 | 10860 | 15931 | 14039 | 12201 | 10401 | 13498 | 11743 | 10024 | 16250 | 15168 | 12360 |
| 1500 | 17404 | 8576 | 11369 | 19500 | 19500 | 17294 | 19500 | 18615 | 15748 | 19500 | 17234 | 14624 | 18655 | 16188 | 13770 | 17682 | 15374 | 13097 | 19156 | 16900 | 14705 | 12554 | 16258 | 14163 | 12107 | 19500 | 18219 | 14874 |

For other temp conditions and water, please contact LIANG CHI INDUSTRY (THAILAND) CO., LTD.

SOUND PRESSURE LEVEL



REMARKS :

1. Point 1 is 45 extension line of fan discharge.
2. Distance "S"
 1) LBC-T-125 & downwards = 1.5 M
 2) LBC-T-150 & upwards = Fan Diameters.

UNIT : dB

| TOWER MODEL | LBC-T-3 | | | LBC-T-5 | | | LBC-T-8 | | | LBC-T-10 | | | LBC-T-15 | | | LBC-T-20 | | | LBC-T-25 | | |
|-----------------|------------|----|----|------------|------|------|-----------|------|------|-----------|------|------|-----------|------|------|-----------|----|----|------------|----|----|
| MEASURING POINT | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| SCALE A | 62 | 59 | 48 | 62 | 59 | 48 | 63 | 58 | 47.5 | 64 | 59 | 48.5 | 69 | 66 | 53 | 69 | 66 | 53 | 70 | 67 | 57 |
| TOWER MODEL | LBC-T-30 | | | LBC-T-40 | | | LBC-T-50 | | | LBC-T-60 | | | LBC-T-70 | | | LBC-T-80 | | | LBC-T-100 | | |
| MEASURING POINT | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| SCALE A | 73 | 67 | 59 | 77 | 70 | 59 | 77 | 70 | 59 | 79 | 73 | 64 | 81 | 75 | 66 | 82 | 76 | 67 | 79 | 71 | 60 |
| TOWER MODEL | LBC-T-125 | | | LBC-T-150 | | | LBC-T-175 | | | LBC-T-200 | | | LBC-T-225 | | | LBC-T-250 | | | LBC-T-300 | | |
| MEASURING POINT | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| SCALE A | 84 | 74 | 64 | 77 | 71 | 62 | 80 | 75 | 65 | 79 | 73 | 63 | 76 | 71 | 62 | 76 | 71 | 62 | 77 | 72 | 63 |
| TOWER MODEL | LBC-T-350 | | | LBC-T-400 | | | LBC-T-500 | | | LBC-T-600 | | | LBC-T-700 | | | LBC-T-800 | | | LBC-T-1000 | | |
| MEASURING POINT | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| SCALE A | 77 | 72 | 63 | 79.5 | 74.5 | 65.5 | 79.5 | 74.5 | 65.5 | 77.5 | 72.5 | 63.5 | 77.5 | 72.5 | 63.5 | 78.5 | 74 | 65 | 80 | 75 | 66 |
| TOWER MODEL | LBC-T-1250 | | | LBC-T-1500 | | | | | | | | | | | | | | | | | |
| MEASURING POINT | 1 | 2 | 3 | 1 | 2 | 3 | | | | | | | | | | | | | | | |
| SCALE A | 90 | 80 | 65 | 90 | 80 | 65 | | | | | | | | | | | | | | | |

NOTE : The accuracy of measuring value is ± 3 decibel.

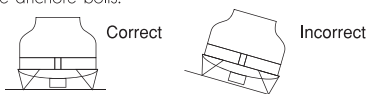
INSTRUCTIONS FOR THE INSTALLATION OF LBC-T COOLING TOWERS

1. Location Selection

- a. Roofs other open places with free air supply are the best sites for cooling Towers.
- b. Minimum distance between two cooling tower location.
- c. Minimum space for cooling tower being near the enclosure.
- d. Keep away from smoke and dusty yards.
- e. Avoid places where corrosive gases exist, such as chimneys or hot springs.
- f. Keep away from hot places such as boilers, kitchens etc.

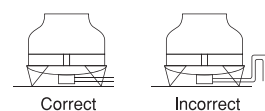
2. Position :

- a. See that the piping can be carried out easily.
- b. Be sure to place the tower vertically, as uneven sprinkling will lower the cooling efficiency. See picture below.
- c. Tighten the anchor bolts.

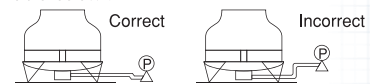


3. Piping :

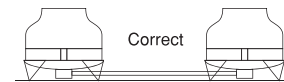
- a. The inlet and outlet pipes must have a downward installation and be lower than the pipe connections of the water sump. See picture below :



- b. The pipe should be the same size as the pipe connections on the water sump. Smaller ones will lower the cooling efficiency and larger ones will be a waste of material.
- c. The circulating pump must be located below the water sump under normal operation. See Picture below :



- d. Twin cooling towers with one pump must also share an additional equalizer between each other so that the water in both towers will have the same level. See picture below.



- e. High pressure flexible tubes must be used at the joints of circulation outlet and inlet, which sizes are over 4 inches.(100mm), to prevent vibration transmitted from the piping, and breakage of the water basin caused by improper piping.

4. Other :

- a. After the installation is completed, examination must be made to see that there are no tools or other objects left in the tower.
- b. See neither the piping nor the water basin leaks.
- c. When the make-up water pressure is low, install either a water tank higher than the water level or a water make-up pump somewhere in the piping system to obtain the desired water pressure.

REFERENCES OF COOLING TOWERS

HOTEL

BANGKOK MARRIOTT RESORT & SPA
CHAOPHYA PARK
GRAND HYATT ERAWAN
MERCHANT COURT HOTEL of LE CONCORDE
NATURAL PANK RAMINDRA GOLF CLUB
RAMA GARDENS
ROLAL PRINCESS
THE AMBASSADOR
THE EMERALD BANGKOK
THE IMPERIAL QUEEN'S PARK BANGKOK
THE ORIENTAL BANGKOK

DEPARTMENT STORE/SUPERMARKET

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SIAM JUSCO (RATTANATIBET)
SIAM MAKRO PUBLIC COMPANY LIMITED
WORLD TRADE CENTER

HOSPITAL

BHUMBOL ADJULYADEJ HOSPITAL
NOPPARAT RAJATHANEE HOSPITAL
POLICE GENERAL HOSPITAL
SIKARIN HOSPITAL (HAD-YAI)
THANYAPAK HOSPITAL
WACHIRAPRAKARN GENERAL HOSPITAL

HIGH RISE BLDG.

PRINCESS TOWER
SATHRON CITY TOWER
BO-BEY TOWER

ELECTRONIC/I.T.

ALPHA SOURCE MANUFACTURING
FABRINET CO., LTD.
HANA SEMICONDUCTOR (BKK) CO., LTD.
K.R.PRECISION PUBLIC CO., LTD.

MINEBEA THAI LTD. (BANG PRA-IN)
MINEBEA THAI LTD. (ROJANA)
MINEBEA THAI LTD. (WANG NOI)
NATIONAL MATSUSHTA ELECTRIC WORKS,(AYUTHAYA)LTD.
PHILIPS SEMICONDUCTORS(THAILAND) CO., LTD.
SEAGATE TECHNOLOGY (THAILAND) LTD. (WELCO)
SHINDENGEN (THAILAND) CO., LTD.
SUMMIT ELECTRONIC COMPONENTS CO., LTD.
THAI BRANTA MULIA CO., LTD.

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BODY FASHION (THAILAND) LTD.
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S.R.SPINNING CO., LTD.
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TEJJIN (THAILAND) LTD. (RANG-SIT)
TORAY NYLON THAI CO., LTD
TORAY FIBERS (THAILAND) LTD.
Y.R.C.TEXTILE CO., LTD.

INSTITUTION/BANK/GOVERNMENT OFFICE & ENTERPRISE

THAI AIRWAY INTERNATIONAL LIMITED.
THE MASS COMMUNICATION ORGANIZATION OF THAILAND
THAILAND TOBACCO MONOPOLY

FOOD IND.

CALYX PRODUCTS COLD STORAGE CO., LTD.
AJINOMOTO (THAILAND) CO., LTD.
BANGKOK RANCH PUBLIC CO., LTD.
GARDENIA FOODS (THAILAND) CO., LTD.
KHAO SHONG INDUSTRY 1997 CO., LTD.

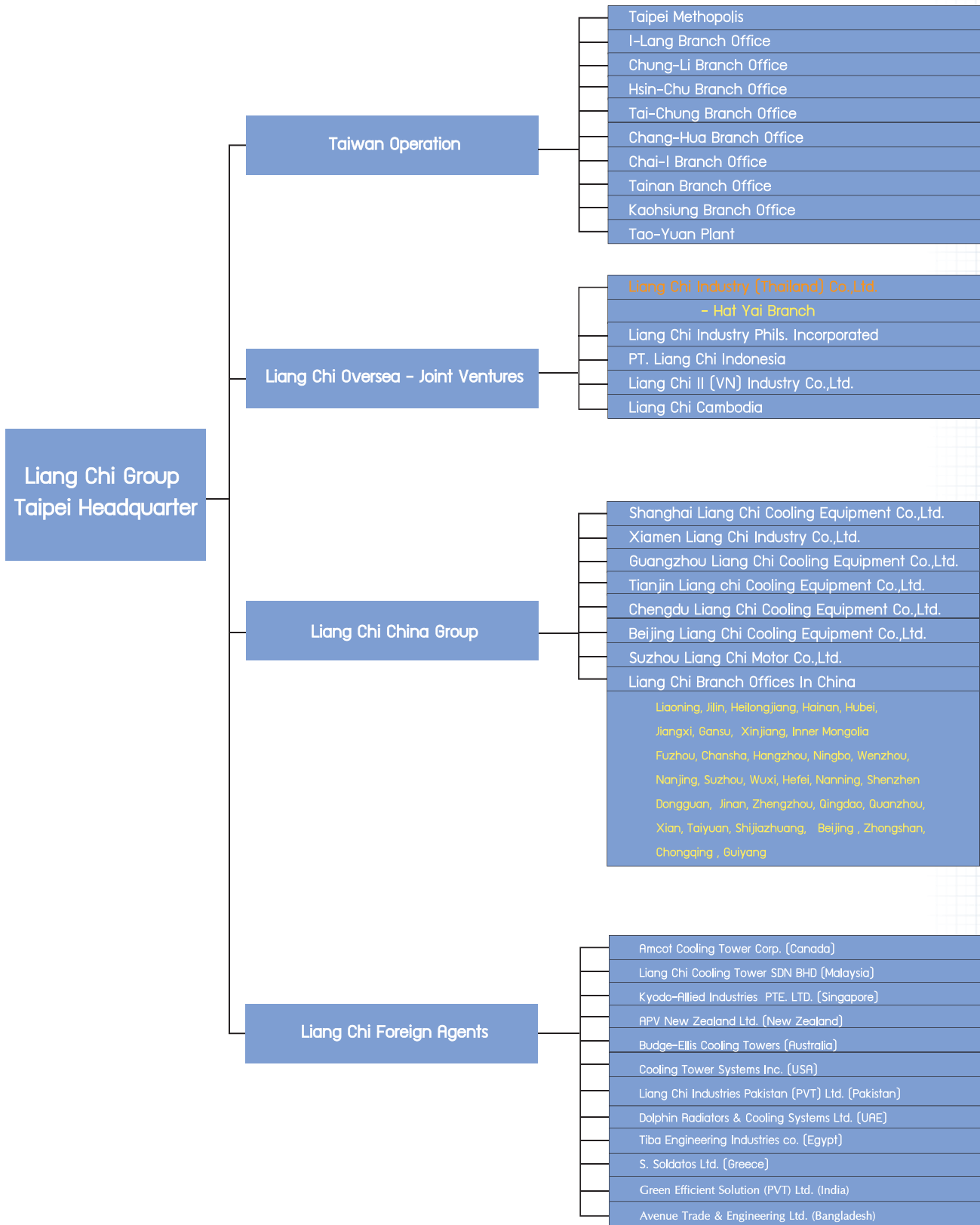
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PATAYA FOOD INDUSTRIES LIMITED
PATUM RICE MILL AND GRANARY PUBLIC
THAI GLICO CO., LTD.
THAI NIPPON FOOD CO., LTD.
THAI PURE DRINK LTD. (LUMLUKA)
THAI PURE DRINK LTD. (RANGSIT PLANT)
THAI UNION MANUFACTURING CO., LTD.
THAILAND FISHERY COLD STORAGE
THE THAI DAIRY INDUSTRY CO., LTD.

OTHER

ABB LIMITED
ABS PLASTIC CO., LTD.
AIR PRODUCT CO., LTD.
ALPHA SOURCE MANUFACTURING
BERU PROSPACK CO., LTD.
CHROMALLOY (THAILAND) LTD.
CROWN SEAL PUBLIC CO., LTD.
DENSO (THAILAND) CO., LTD.
EASTERN PETROCHEMICAL CO., LTD.
ICI ASIATIC CHEMICAL COMPANY LIMITED.
IMPERIAL INDUSTRIAL CHEMICALS (THAILAND) CO., LTD.
LION CONTAINER (THAILAND) CO., LTD.
NHK SPIRNG (WELLGROW)
NIKKEI SIAM ALUMINIUM CO., LTD.
OKAMOTO (THAI) CO., LTD.
SAHAVIRIYA PLATE MILL CO., LTD.
SIAM TIRE CORD CO., LTD.
SIAM GS BATTERY CO., LTD.
SIAM UNITED HI-TECH LTD.
T.C.J. MOTOR PUBLIC CO.,LTD.
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THAI MITSUI SPECIALTH CHEMICALS CO., LTD.
URETHANE PLASTIC CO., LTD.
THE NAWALOHA INDUSTRY CO., LTD.
THE UNION MOSAIC INDUSTRY PUBLIC CO., LTD.
UNION CARBIDE THAILND LIMITED.



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