



CHILLKING®
Chiller Systems

COOLING SYSTEM SIZING CHART

HOW TO USE THE SIZING CHART: Fill in the blanks on the left, multiply by the BTU's indicated, and then add them up for a total heat load. On the reverse side, you will find cooling system packages to match various BTU loads.

For More Information, Please Visit Our Site: www.hydroinnovations.com

| | | | | |
|--|----------------------|---------------|--------------------------------|-----|
| How many 1000 watt HID bulbs inside the garden? | <input type="text"/> | X 4,000 BTU = | <input type="text" value="0"/> | BTU |
| How many 1000 watt magnetic ballasts inside the garden? | <input type="text"/> | X 3,500 BTU = | <input type="text" value="0"/> | BTU |
| How many 1000 watt digital ballasts inside the garden? | <input type="text"/> | X 2,500 BTU = | <input type="text" value="0"/> | BTU |
| How many 600 watt HID bulbs inside the garden? | <input type="text"/> | X 2,400 BTU = | <input type="text" value="0"/> | BTU |
| How many 600 watt magnetic ballasts are inside the garden? | <input type="text"/> | X 2,100 BTU = | <input type="text" value="0"/> | BTU |
| How many 600 watt digital ballasts are inside the garden? | <input type="text"/> | X 1,500 BTU = | <input type="text" value="0"/> | BTU |
| If using a CO2 generator, enter room cu. ft. (L x W x H) | <input type="text"/> | X 2.4 BTU = | <input type="text" value="0"/> | BTU |
| Dehumidification: Air handlers offer dehumidification but additional dehumidification may be necessary. For extremely high humidity, excessive venting, or when only using Ice Boxes for cooling (Ice Boxes are not intended to dehumidify), a dehumidifier should be considered. | | | | |
| If using a dehumidifier, how many pints per day is it rated for? | <input type="text"/> | X 30 BTU = | <input type="text" value="0"/> | BTU |
| BTU's required for room with no equipment running (See chart on right) | | | <input type="text"/> | BTU |

Suggested Cooling BTU's Before Adding Equipment

| ROOM DIMENSIONS (SQUARE FEET) | RECOMMENDED A/C BTU |
|-------------------------------|---------------------|
| 5'x5' (25 sq. ft.) | 2,500 |
| 5'x10' (50 sq. ft.) | 3,100 |
| 10'x10' (100 sq. ft.) | 4,200 |
| 10'x15' (150 sq. ft.) | 5,300 |
| 10'x20' (200 sq. ft.) | 6,500 |
| 10'x25' (250 sq. ft.) | 7,500 |
| 15'x20' (300 sq. ft.) | 8,700 |
| 15'x25' (375 sq. ft.) | 10,400 |
| 20'x20' (400 sq. ft.) | 11,000 |
| 20'x25' (500 sq. ft.) | 13,100 |
| 20'x30' (600 sq. ft.) | 15,400 |
| 30'x30' (900 sq. ft.) | 22,000 |

ASSUMPTIONS FOR THIS CHART ARE AS FOLLOWS:

- 8' ceilings.
- Sealed environment.
- Adequate insulation at least 3 ½" thick.
- Highest ambient temperature of 100 degrees.
- The condensers are outdoors with proper clearance to allow adequate air flow.
- Generator is using no more than .003 cubic feet per cubic foot of room space (i.e. 2.5 cubic feet per hour of CO2 for 10'x10'x8' room).

Factors like high ceilings, poor insulation, constant venting, incorrect condenser placement, higher than 100 degree ambient outdoor temperature, or running dehumidifiers will in some cases drastically change the cooling BTU needs. For more specific sizing for Hydro Innovations and ChillKing equipment please call the office at 512-321-7575.

SCROLL DOWN for recommended water-cooled system sizing.

GRAND TOTAL = BTU

Use the BTU calculator from page 1, and match the sizes in the chart



- CONTACT US -
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Oversizing and Dehumidification

We always recommend oversizing a water-cooling system by 10-20%. This allows your system additional down time (with no energy consumption during the down time), and to step up to the next size of chiller usually isn't much more expensive. A chiller system utilizing a water-cooled air handler can both cool and dehumidify even when the compressor on the chiller isn't consuming power. It does this by using stored cooling energy in the circulating water. In addition to the superior energy efficiency of water cooling, 24 hour dehumidification is also a huge advantage. An a/c can only cool and dehumidify while the compressor is running, so down time results in no cooling and no dehumidification—meaning that constant power consumption is required if constant cooling/dehumidification is needed. a/c users will usually have a humidity spike during lights off—this is because the compressor on the a/c doesn't come on as frequently during the lights off cycle because less cooling is needed, and when the compressor isn't on, no dehumidification is happening.

Multiple Rooms

Another big advantage that chiller systems have over air conditioners is that one central chiller/compressor can control several different rooms. For an example, one ten ton chiller can cool 2 rooms with (10) 1000 watt lights and a veg room by utilizing (2) 4 ton air handlers, one in each large room, and 2 ton air handler in the veg room. If using a flip flop for your lighting you can use a 5hp chiller to cool 2 rooms of 12 lights each. With an a/c, you can't do this without installing complicated, restrictive dampers, which also completely cut off the cooling and dehumidification to one of the two rooms. A single chiller operating multiple water-cooled air handlers allows each room has its own thermostat and humidistat controls, giving you much more flexibility. There are multiple configurations and possibilities for multiple rooms, all requiring the use of only one chiller.

Minimum Recommended Cooling Systems by CHILLKING®

Use the BTU calculator on the other side and match the sizes below.

| RESIDENTIAL MODELS WITH ICE BOX SOLUTION. | | MSRP |
|---|---|-----------------------|
| 0-6,000 BTU | ½ ton ChillKing Chiller, (2-3) 8" Ice Box, 55 gallon res, 3/10 to 4/10 HP pump, 8" Max-Fan | \$3,532.00-\$3,732.00 |
| 6,000-12, 0000 BTU | 1 ton ChillKing Chiller, (3-4) 8" Ice Box, 55 gallon res, 3/10 to 4/10 HP pump, 10" Max-Fan | \$4,180.00-\$4,380.00 |
| 12,000-24,000 BTU | 2 ton ChillKing Chiller, (6-8) 8" Ice Box, 55 gallon res, ½ HP pump, (2) 8" Max-Fan | \$5,380.00-\$5,780.00 |

| COMMERCIAL SELF CONTAINED MODELS WITH ICE BOX SOLUTION. Pump and reservoir built in. | | MSRP |
|--|--|-------------------------|
| 0-24,000 BTU | 2 ton ChillKing SC Chiller, (6-7) 8" Ice Boxes | \$5,525.00-\$5,725.00 |
| 24,000-36,000 BTU | 3 ton ChillKing SC Chiller, (8-9) 8" Ice Boxes | \$7,550.00-\$7,750.00 |
| 36,000-48,000 BTU | 4 ton ChillKing SC Chiller, (10-11) 8" Ice Boxes | \$9,525.00-\$9,725.00 |
| 48,000-60,000 BTU | 5 ton ChillKing SC Chiller, (11-12) 8" Ice Boxes | \$10,050.00-\$10,250.00 |

| COMMERCIAL SELF CONTAINED MODELS WITH AIR HANDLER SOLUTION. Pump and reservoir built in. | | MSRP |
|--|--|-------------|
| Multiple air handlers can be utilized on a single chiller as long as total BTU load of air handlers and chiller are equal. | | |
| Here are some basic setups, many options are available: | | |
| 0-24,000 BTU | 2 ton ChillKing SC Chiller + 2 ton Air Handler | \$7,625.00 |
| 24,000-36,000 BTU | 3 ton ChillKing SC Chiller + 3 ton Air Handler | \$9,525.00 |
| 36,000-48,000 BTU | 4 ton ChillKing SC Chiller + 4 ton Air Handler | \$11,325.00 |
| 48,000-60,000 BTU | 5 ton ChillKing SC Chiller + 5 ton Air Handler | \$11,650.00 |
| 60,000-96,000 BTU | 8 ton ChillKing SC Chiller + 8 ton Air Handler | \$17,000.00 |
| 96,000-120,000 BTU | 10 ton ChillKing SC Chiller + 10 ton Air Handler | \$18,800.00 |
| 96,000-120,000 BTU | 10 ton ChillKing SC Chiller + (2) 5 ton Air Handlers | \$20,150.00 |
| 120,000-144,000 BTU | 12 ton ChillKing SC Chiller + 8 ton Air Handler + 4 ton Air Handler | \$24,350.00 |
| 120,000-144,000 BTU | 12 ton ChillKing SC Chiller + (3) 4 ton Air Handlers | \$25,950.00 |
| 144,000-180,000 BTU | 15 ton ChillKing SC Chiller + 10 ton Air Handler + 5 ton Air Handler | \$27,700.00 |
| 144,000-180,000 BTU | 15 ton ChillKing SC Chiller + (3) 5 ton Air Handlers | \$29,050.00 |

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