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Commercial ice machines are used in restaurants, hospitals, hotels, schools, offices and grocery stores. Energy efficient ice machines are, on average, 30 percent more efficient than standard models. Investing in more energy efficient ice machines can save hundreds of dollars per year.

**WHAT AFFECTS OPERATING COST?**

The energy efficiency of an ice machine is indicated in kilowatt-hours (kWh) of power consumed per 100 pounds of ice produced. When comparing ice machine models, the variation in the amount of electricity used is significant - from 4 to 20 kWh per 100 pounds of ice produced. The lower the power consumed, the less the ice machine will cost to operate. In general, the power consumed per 100 pounds of ice produced is higher for smaller capacity equipment.

In addition to power consumption, you should examine water consumption as well. Water use affects the operating cost of any ice machine. Water is consumed to produce the ice and is possibly used for condenser operation, depending on the type of ice machine purchased.

Currently, an ice machine rating database exists only for cube-type units. This database is maintained by Air Conditioning and Refrigeration Institute (ARI) and lists the capacity, power consumption, potable water usage and condenser water usage (if applicable) for all new equipment available. However, many manufacturers can provide this information for other unit types.

**ICE TYPES**

Automatic ice machines manufacture two main types of ice: flake and cube. Each type of ice has its own applications. For example, flake ice is often used for product displays, while cube ice is often used for beverages. There is another difference between these types of ice. In flake machines, 100 percent of the potable water consumed is made into ice, including any impurities found in the water. In cube machines, water flows over freezing plates and the impurities are washed away during purge cycles. To minimize water costs for cube machines, the purge timer should be adjusted to the minimum required to eliminate the impurities in the sump – a pit or reservoir for liquids.

Unit Type* & Available Sizes (in lbs/24 hours)	Efficiency Range**	Benefits	Considerations
<b>Air cooled</b> SC - 38-240 IMH - 194-1575	4.7-11.7 kWh/100 lbs Self contained units can use up to 20.4 kWh/100 lbs	<ul style="list-style-type: none"> <li>■ Lower first cost</li> <li>■ Use less water</li> </ul>	<ul style="list-style-type: none"> <li>■ Added heat load in space</li> </ul>
<b>Water cooled</b> SC - 123-196 IMH - 216-1864	3.8-10.5 kWh/100 lbs	<ul style="list-style-type: none"> <li>■ Reduced heat load into space</li> </ul>	<ul style="list-style-type: none"> <li>■ System cooling by closed loop reduces water use</li> </ul>
<b>Remote cooled</b> 400-2321	4.4-8.8 kWh/100 lbs	<ul style="list-style-type: none"> <li>■ Use less water</li> <li>■ Reduced heat load into space</li> <li>■ Less noise</li> </ul>	<ul style="list-style-type: none"> <li>■ Added installed costs for running lines to remote location</li> </ul>

\* SC - Self-contained, IMH - Ice Making Head (no storage bin), Remote-cooled is air cooled.  
\*\* Per ARI Directory of Automatic Commercial Ice-cube Machines and Ice Storage Bins 810/820, July 1,2005 - December 31, 2005

## **MODEL SELECTION**

The Consortium on Energy Efficiency (CEE) is a national, nonprofit organization that promotes the manufacture and purchase of premium energy efficiency products and services. Visit CEE's Web site, at [www.cee1.org](http://www.cee1.org) for additional information on ice machines and a list of ice machines that currently meet established premium efficiency specifications.

## **ENERGY RECOVERY OPPORTUNITIES**

Besides purchasing more efficient units, another opportunity to reduce your business's overall energy consumption is to consider energy recovery options. Ice machines, along with other refrigeration equipment, could be considered sources of waste heat to provide heat to hot water production or for space heating.

## **FOR MORE INFORMATION**

If you are interested in learning more about energy efficient ice machines or other energy saving equipment for your operation, contact Focus on Energy at 800.762.7077 and ask to speak with a member of the Commercial Team. Or visit our Web site at [focusonenergy.com](http://focusonenergy.com).