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May 15, 2014

Ms. Brenda Edwards
U.S. Department of Energy
Building Technologies Office, Mailstop EE-5B
1000 Independence Avenue, SW
Washington, DC 20585-0121

RE: COMMENTS ON PROPOSED RULEMAKING FOR AUTOMATIC COMMERCIAL ICE MAKERS ENERGY CONSERVATION STANDARDS - DOCKET EERE-2010-BT-STD-0037 - RIN 1904-AC39

The Alliance for Water Efficiency is pleased to submit the attached response to DOE's request for comments on its proposed rulemaking on energy conservation standards for automatic commercial icemakers.

We examined this rulemaking with considerable interest, as the connection between water and energy is very important to us. We were disappointed to see that this important area of analysis was largely ignored in the proposed rulemaking, and we have provided detailed comments in the attached document.

Energy efficiency and water efficiency have a strong nexus, and it is important to recognize this in the analysis and in any proposed rulemaking undertaken by DOE. Neither energy nor water can be viewed in isolation without impacting the other. Saving pennies on kWh savings only to spend more dollars on water in exchange for that energy saving is hardly a trade-off that should go unexamined.

The Alliance for Water Efficiency is a nonprofit organization dedicated to the efficient and sustainable use of water. We represent a broad coalition of stakeholders which include water suppliers, business and industry, government agencies, energy and environmental advocates, and academia.

We appreciate your consideration of our comments and recommendations. Please let us know if you have any questions.

Sincerely,

A handwritten signature in blue ink that reads "Mary Ann Dickinson".

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Analysis of the US Department of Energy's Proposed Energy Conservation Standards for Automatic Ice Makers

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The full text of the DOE proposal can be found at:

DEPARTMENT OF ENERGY
10 CFR Part 431
Docket Number EERE-2010-BT-STD-0037
RIN 1904-AC39

Energy Conservation Program: Energy Conservation Standards for Automatic Commercial Ice Makers
<http://www.regulations.gov/#!documentDetail;D=EERE-2010-BT-STD-0037-0062>

Summary Comments

The following are comments related to the documents issued as part of the US Department of Energy's proposed changes to standards for commercial type automatic ice makers. The document examines energy use by this type of equipment from a number of angles and looks at its end use by type of facility. The document includes analysis of payback periods based on energy savings, discussion of the various executive orders from three Presidents on energy and water savings, and looks at CO² emissions based on their calculated energy savings. DOE even tested various machines to compare actual operating energy use to manufacturing information.

However, DOE unfortunately totally fails to consider the water use implications of their proposed changes. Each of these is summarized:

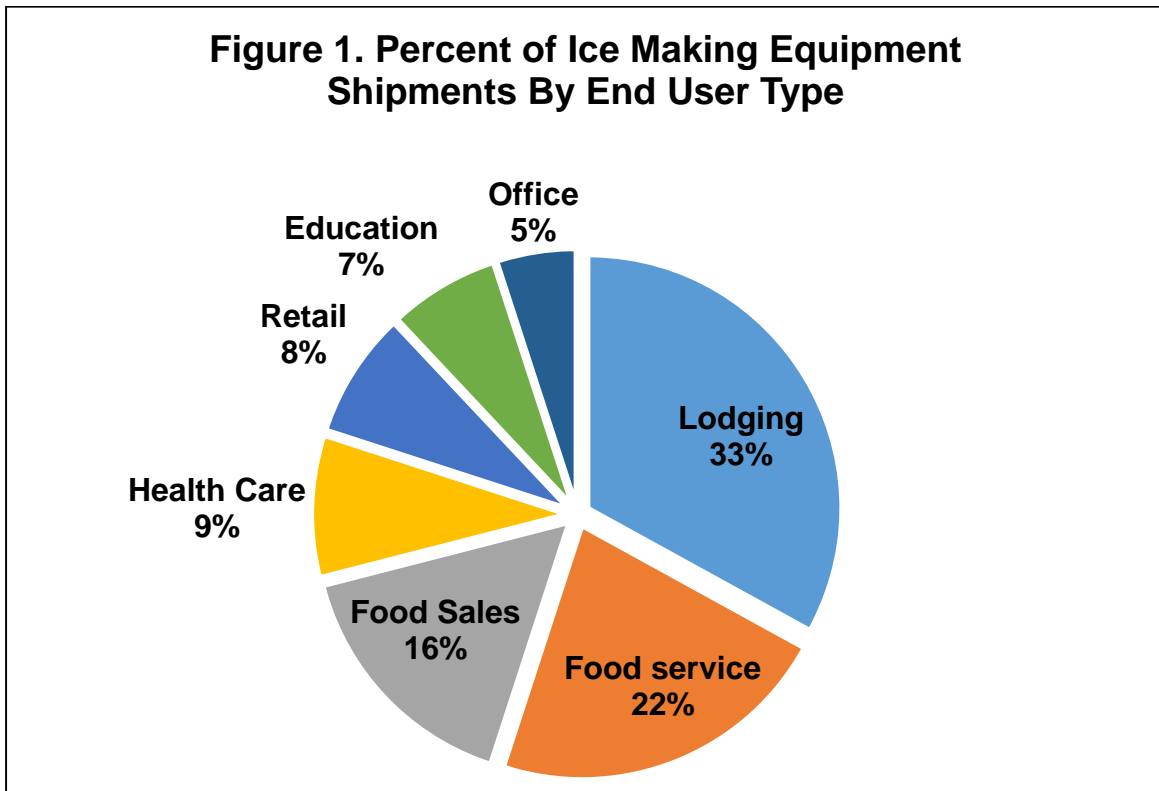
1. The DOE analysis only looks at the energy savings related to water cooled vs. air cooled ice makers for its life cycle cost savings. Water and wastewater costs average \$9.44 per thousand gallons according to a Black and Veatch study of the 50 largest cities in the United States. When water and wastewater costs are considered, air cooled equipment is clearly the most cost effective even at the lowest combined water and sewer rates for the 50 largest cities. Even though the DOE document shows that only 10 percent of current ice machines sold are water cooled, the amount of water they would use through once through cooling would be huge. DOE should include water and wastewater cost in the life cycle analysis.
2. Embedded energy of water was not included in the analysis. Based on the DOE calculations for water use and assuming that the embedded energy per thousand gallons is 3.0 kWh per 1000 gallons of water (water and wastewater combined), the embedded energy in the cooling water is in the range of 0.49 kWh per 100 pounds of ice made. This cost is not borne by the end user but is borne by the water and wastewater rate payer. This energy use also contributes to CO₂ emissions from power generation.
3. The rulemaking will drive product sales to water-cooled equipment. Comparison of the Air Conditioning, Heating and Refrigeration Institute (AHRI) actual data on new machines available on the American market shows that for air cooled machines, the DOE proposed energy use is lower than the majority of the equipment available. Thus, this would largely force the purchase of water cooled equipment only to meet new standards.
4. For water cooled equipment, the DOE proposed condenser cooling water use rates exceed the AHRI factory settings for water use rates (gallons of water per 100 pounds of ice produced). While there are significant water use reductions that could be realized by reasonable water use standards, the DOE proposal does nothing to garner these water savings. The maximum cooling water use rates proposed by the DOE are higher

water use rates for all water cooled ice machines listed in the AHRI directory for ice making equipment (with a very few exceptions). The proposed DOE standards will have no significant effect on promoting readily available technology to achieve water efficiency. The net result is, once again, that the new DOE standards fail to propose any meaningful restriction on the amount of cooling water used.

5. The DOE document discusses the use of closed loops for water cooled equipment but does not propose any standards to require it. The lack of a closed loop cooling system requirement results in a huge loophole for water waste to flow.
6. The rising cost of water needs to be considered. Based on recent available research, water and wastewater rates are increasing significantly faster than electric rates and are projected to continue to do so. This will mean that the negative impacts on lifetime cost of operations with water cooled equipment will magnify in the future.
7. The DOE document does not address the potable water used to actually make the ice. DOE discusses EPA's Energy Star standards, but says that DOE only looks at cooling water, ignoring the embedded energy in the potable water of the non-cooling water use. Even most air-cooled ice makers use significantly more potable water than the water contained in the ice itself (flake or pellet ice machines usually being the exception).

Background Analysis¹

The US Department of Energy has proposed new energy standards for commercial automatic ice making equipment such as that found in many commercial operations. Currently, about 90 percent of all equipment sold is air cooled and 10 percent is water cooled. Lodging and food service are the largest users of ice making equipment.



The proposed new standards would impact the entire market. Tables 1 (a) and (b), summarizes these proposed standards. It covers the following types of equipment:

- Ice making heads – IMH
- Remote condenser units - RCU
- Remote condenser and compressor units – RCRC
- Self-contained SC

Ice making heads and both remote systems are typically used where larger volumes of ice are needed. The remote units are all air cooled and the compressor cooling coils are located outside. They do not reject heat into a building. Air cooled self-contained and ice making head equipment does reject heat into the building. Water cooled equipment rejects heat into the water. Water cooled ice makers can be connected to chilled water or cooling tower loops, but the vast majority of them simply dump the water to the sanitary sewer after the water passes through the equipment.

¹ Authored by Bill Hoffman, Principal, H.W. Hoffman and Associates, LLC (2014) - Consultant to the Alliance for Water Efficiency

**Table 1. (a) Proposed Energy Conservation Standards for
Batch Type Automatic Commercial Ice Makers**

Equipment type	Type of cooling	Rated harvest rate lb. ice/24 hours	Maximum energy use kilowatt-hours (kWh)/100 lb. ice	Maximum condenser water use gal/100 lb. ice
Ice-Making Head	Water	<500	5.84-0.0041H	200-0.022H
		≥500 and <1,436	3.88-0.0002H	200-0.022H
		≥1,436 and <2,500	3.6	200-0.022H
		≥2,500 and <4,000	3.6	145
Ice-Making Head	Air	<450	7.70-0.0065H	NA
		≥450 and <875	5.17-0.0008H	NA
		≥875 and <2,210	4.5	
		≥2,210 and <2,500	6.89-0.0011H	NA
		≥ 2,500 and <4,000	4.1	
Remote Condensing (but not remote compressor)	Air	<1,000	7.52-0.0032H	NA
		≥1,000 and <4,000	4.3	NA
Remote Condensing and Remote Compressor	Air	<934	7.52-0.0032H	NA
		≥934 and <4,000	4.5	NA
Self-Contained	Water	<200	8.55-0.0143H	191-0.0315H
		≥200 and <2,500	5.7	191-0.0315H
		≥2,500 and <4,000	5.7	112
Self-Contained	Air	<175	12.6-0.0328H	NA
		≥175 and <4,000	6.9	NA

Table 1, (b) Proposed Energy Conservation Standards for Continuous Type Automatic Commercial Ice Makers				
Equipment type	Type of cooling	Rated harvest rate lb. ice/24 hours	Maximum energy use kWh/100 lb. ice	Maximum condenser water use gal/100 lb. ice
Ice-Making Head	Water	<900	6.08-0.0025H	160-0.0176H
		≥900 and <2,500	3.8	160-0.0176H
		≥2,500 and <4,000	3.8	116
Ice-Making Head	Air	<700	9.24-0.0061H	NA
		≥700 and <4,000	5	NA
Remote Condensing (but not remote compressor)	Air	<850	7.5-0.0034H	NA
		≥850 and <4,000	4.6	NA
Remote Condensing and Remote Compressor	Air	<850	7.65-0.0034H	NA
		≥850 and <4,000	4.8	NA
Self-Contained	Water	<900	7.28-0.0027H	153-0.0252H
		≥900 and <2,500	4.9	153-0.0252H
		≥2,500 and <4,000	4.9	90
Self-Contained	Air	<700	9.2-0.0050H	NA
		≥700 and <4,000	5.7	NA

Based on AHRI information by brand and ice maker type, there are currently 556 different models available for sale on the American market. The following table [Table 2.] shows how many models are available for sale in the United States based on the latest information from the Air Conditioning, Heating, and Refrigeration Institute (AHRI) data base. Only those that are currently available for sale are included in the analysis.

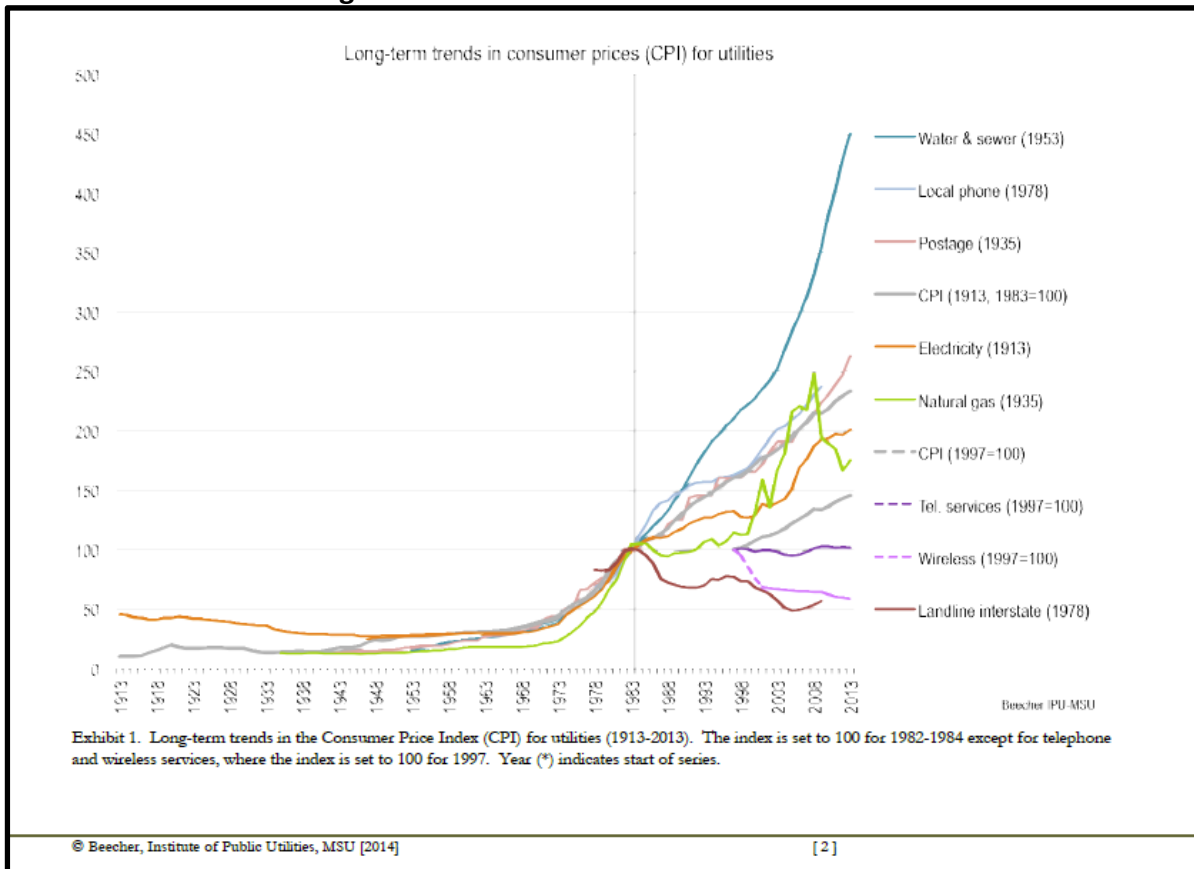
**Table 2. Air-Conditioning, Heating, and Refrigeration Institute (AHRI)
Ice Machine Data for the 556 New Machines Models Available on the Market**

Unit Type	Cooling Type	Type of Ice	Number of Models Offered	Minimum Capacity Available	Maximum Capacity Available
Remote Condenser Unit	Air Cooled	Cube	75	400	2,256
Remote Condenser & Compressor	Air Cooled	Cube	54	520	2,299
Self-Contained	Air Cooled	Cube	40	50	436
Ice Making Head	Air Cooled	Cube	106	222	1,560
Self-Contained	Water Cooled	Cube	8	124	439
Ice Making Head	Water Cooled	Cube	96	260	2,784
Remote Condenser Unit	Air Cooled	Continuous	20	530	1,733
Remote Condenser & Compressor	Air Cooled	Continuous	5	713	1,702
Self-Contained	Air Cooled	Continuous	36	60	533
Ice Making Head	Air Cooled	Continuous	92	251	1,665
Self-Contained	Water Cooled	Continuous	7	300	631
Ice Making Head	Water Cooled	Continuous	17	350	1,642

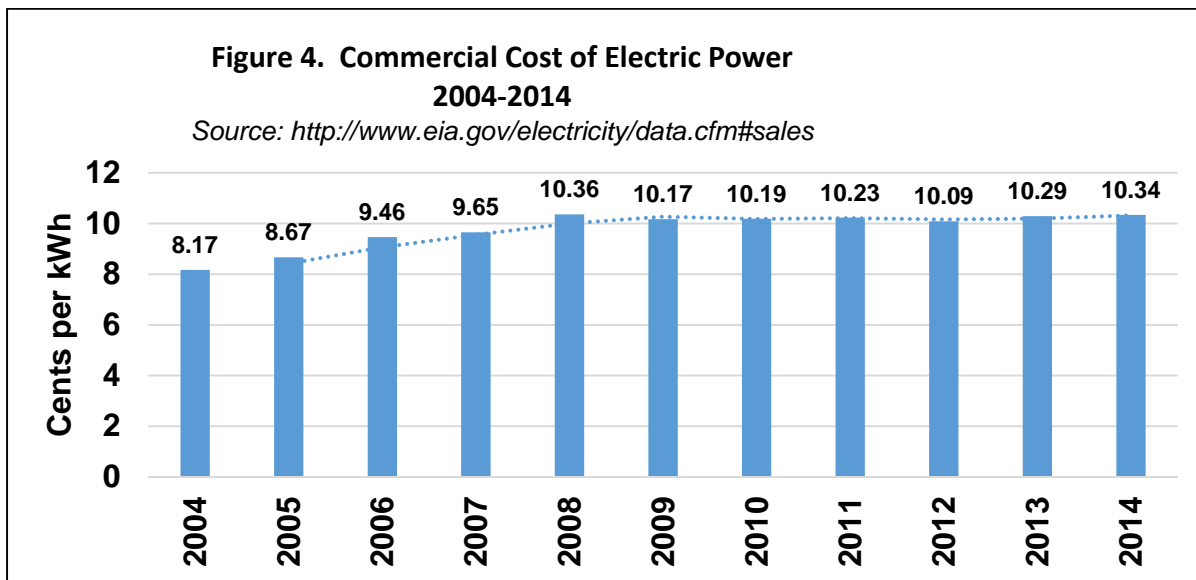
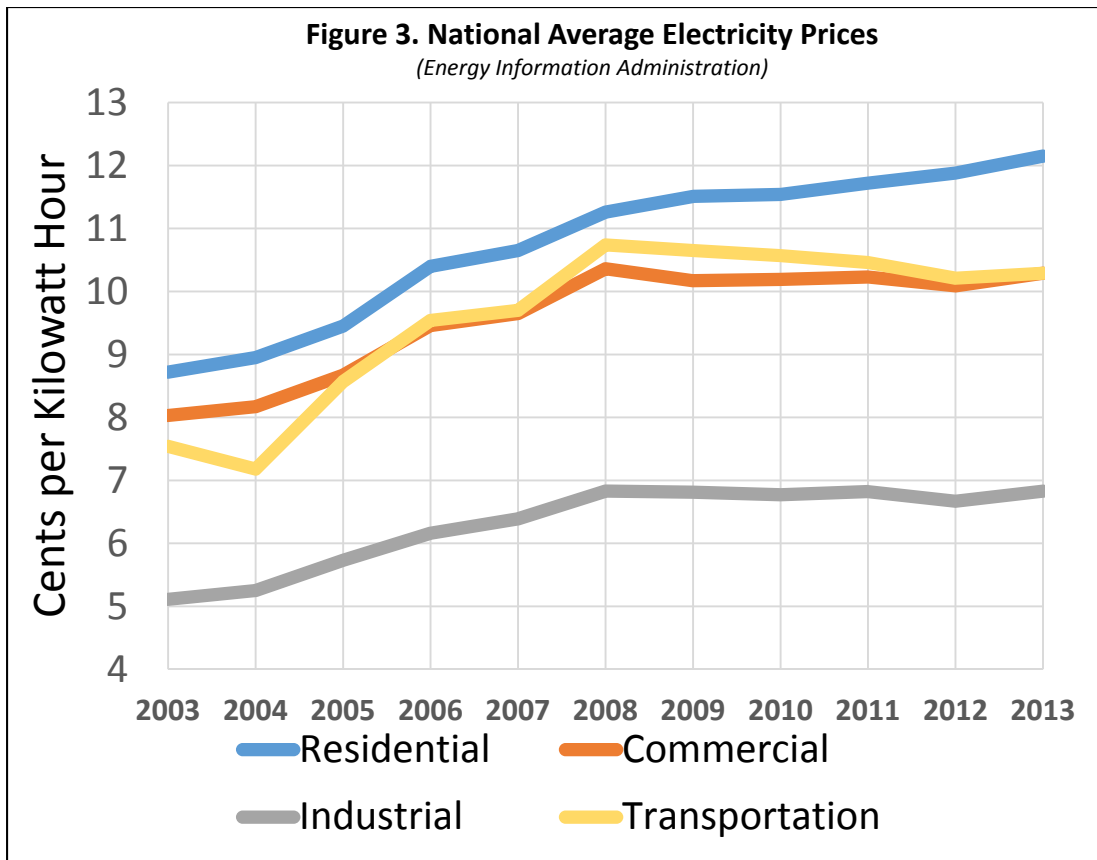
The Cost of Water, Wastewater and Electricity in the United States

Nationally, the cost of water and wastewater service has increased dramatically as seen in Figure 2, which is taken from information prepared by Dr. Janice Beecher at Michigan State University. As the figure shows, water and wastewater rates are increasing much faster than electric rates.

Figure 2. Consumer Price Index for Utilities



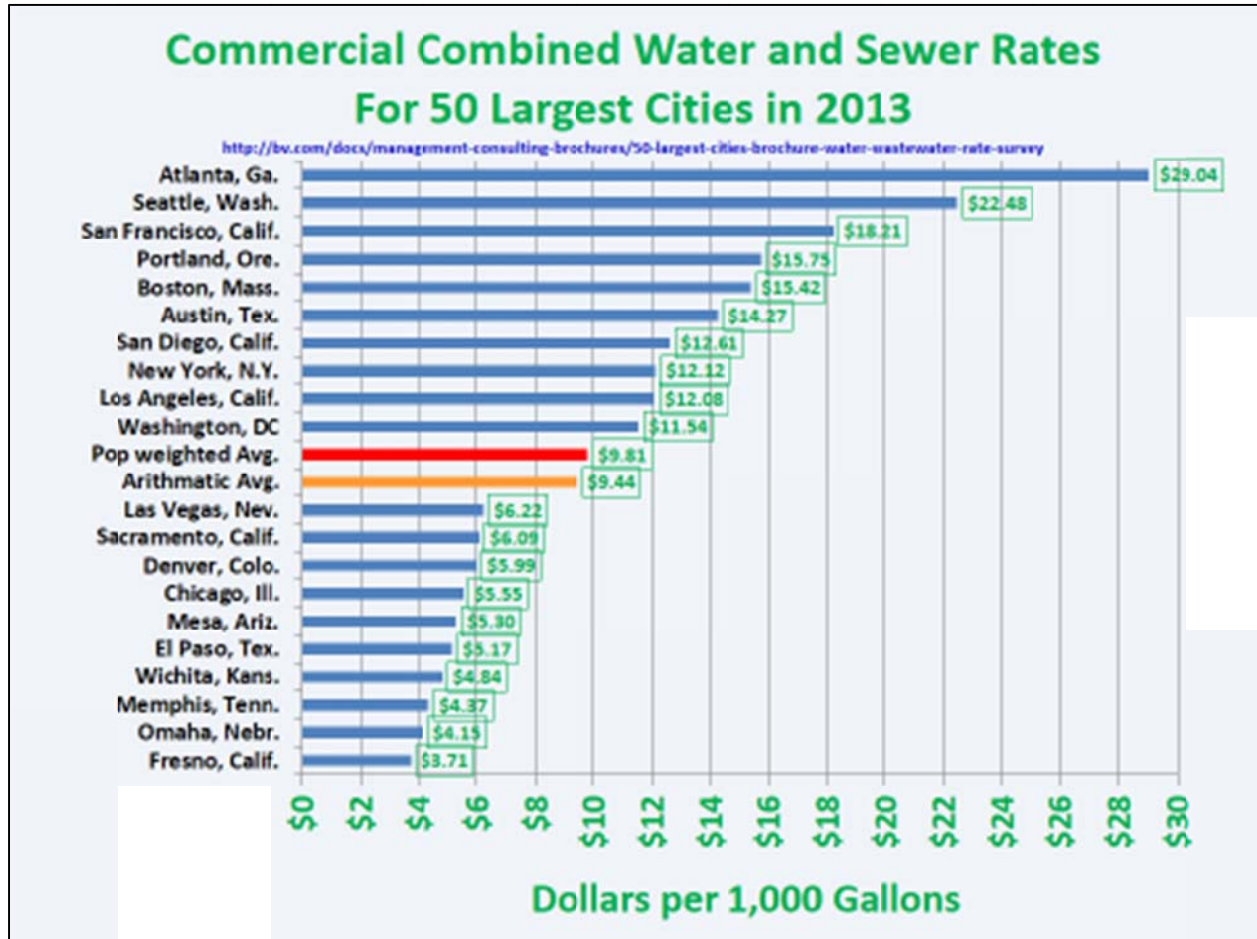
In fact, electric rates have leveled off over the past five years according to the DOE Energy Information Administration as seen in Figure 3. Specifically, commercial rates have averaged about 10.3 cents per kWh since 2008 as shown in Figure 4.



By contrast, water and sewer rates have doubled since 2001 according to the American Water Works Association. Black and Veatch, a major water and wastewater consulting firm, conducts surveys of the cost of water and wastewater services by user class for the 50 largest cities in the United States. Based on their information, the arithmetic average rate in the USA in 2013 was

\$9.44 per thousand gallons. The lowest of the top 50 cities was Fresno California. Their combined water and sewer rates were only \$3.72 per thousand gallons. Figure 5 summarizes these costs.

Figure 5



Although projections of future cost are not certain, electric prices are projected to grow slowly while water and sewer prices are projected to continue their rapid increase for the near future, a growth rate much faster than that for electricity.

Comparison of DOE Proposed Standards and AHRI Information

The equations in the DOE proposed standards (see Tables 1(a) and (b)) are intended to calculate the maximum allowable water and energy rate. The Air Conditioning, Heating and Refrigeration Institute (AHRI) data on commercial ice making equipment publishes energy and water use rates for all available ice makers on the US market. Comparing the AHRI data to the DOE calculated values yielded the following two observations:

1. DOE calculated water use rates consistently exceed condenser cooling water use rates in the AHRI data. Figures 6 (a), (b), (c), and (d) illustrate this.
2. DOE energy calculation for several of the air cooled ice maker types are lower than energy data in the AHRI data base.

Water cooled equipment: As the following four figures show, DOE cooling water use exceed AHRI water use. The net impact of this is that water use is in no way restricted by the proposed standards.

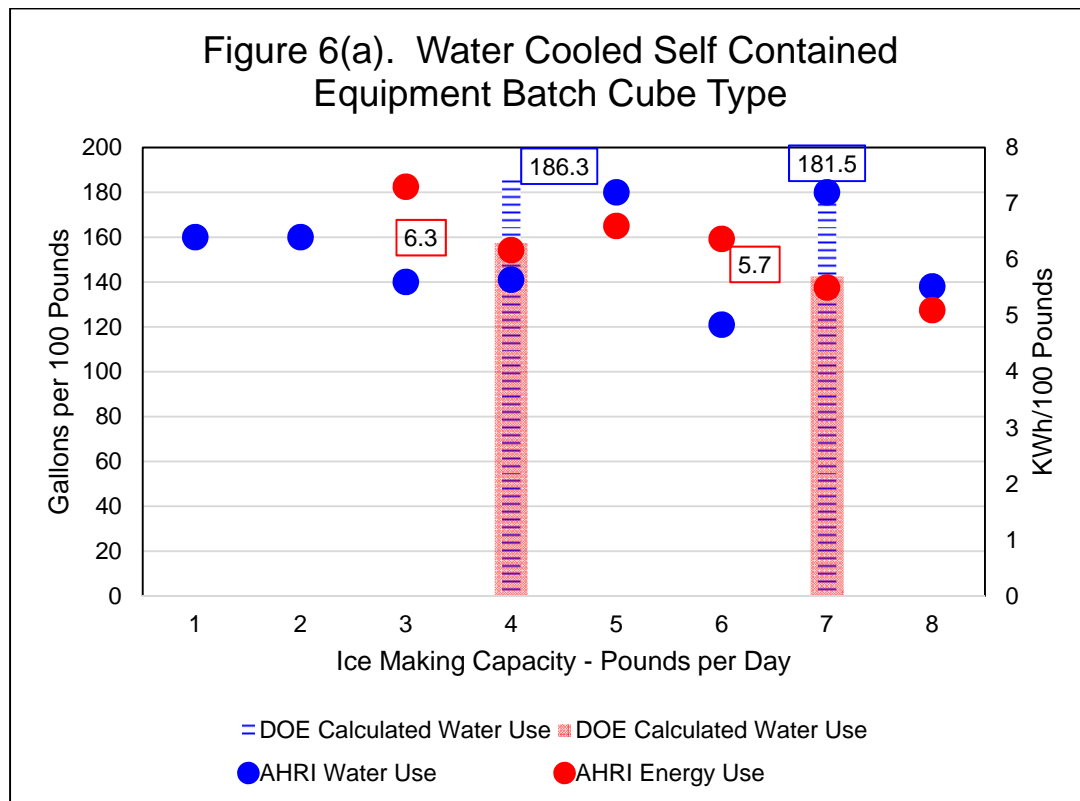


Figure 6(b). Water Cooled Ice Making Head Equipment ContinuousType

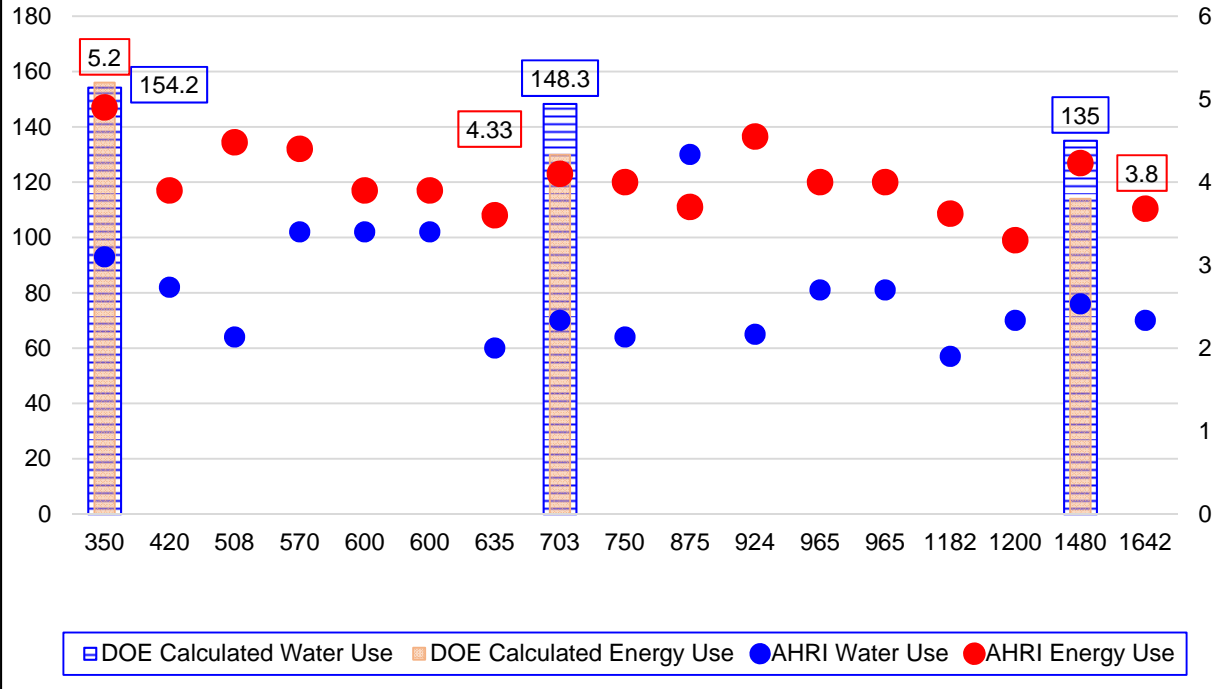
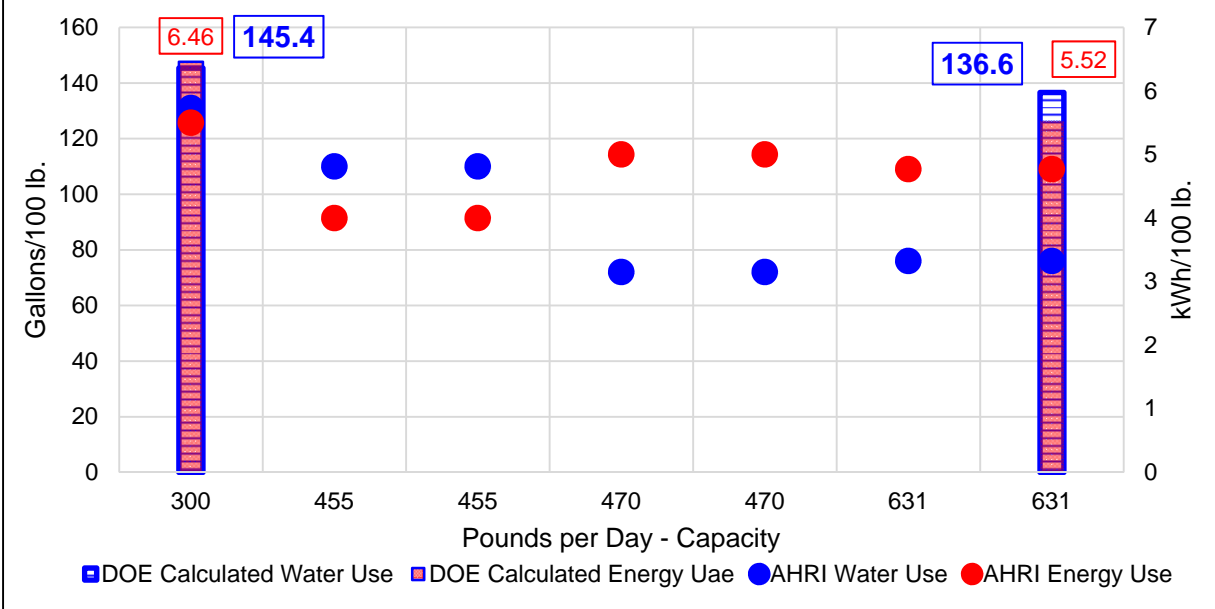
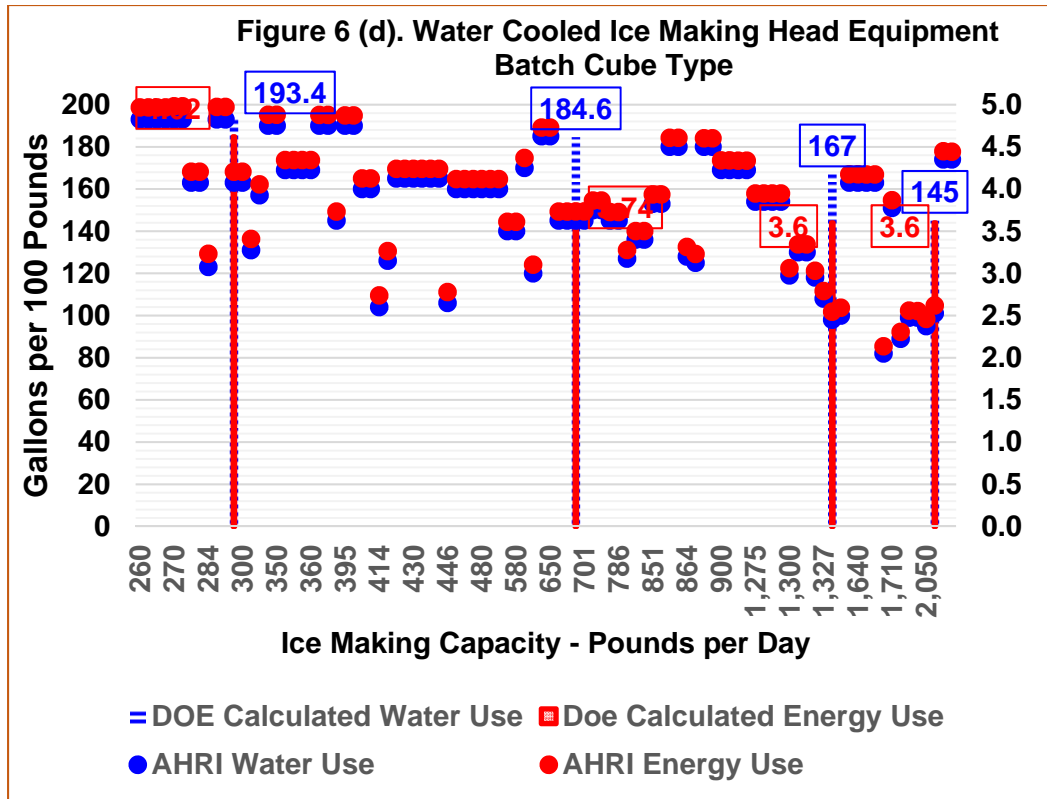


Figure 6(c). Water Cooled Self Contained Equipment ContinuousType





Air cooled equipment: Unfortunately, the DOE proposed energy standards for air cooled equipment are all lower than equipment available based on AHRI data. The net result is that if these standards are promulgated, most air cooled ice makers would be excluded if AHRI information is correct as indicated in the DOE document. This is illustrated in Figures 7 (a), (b), (c), and (d).

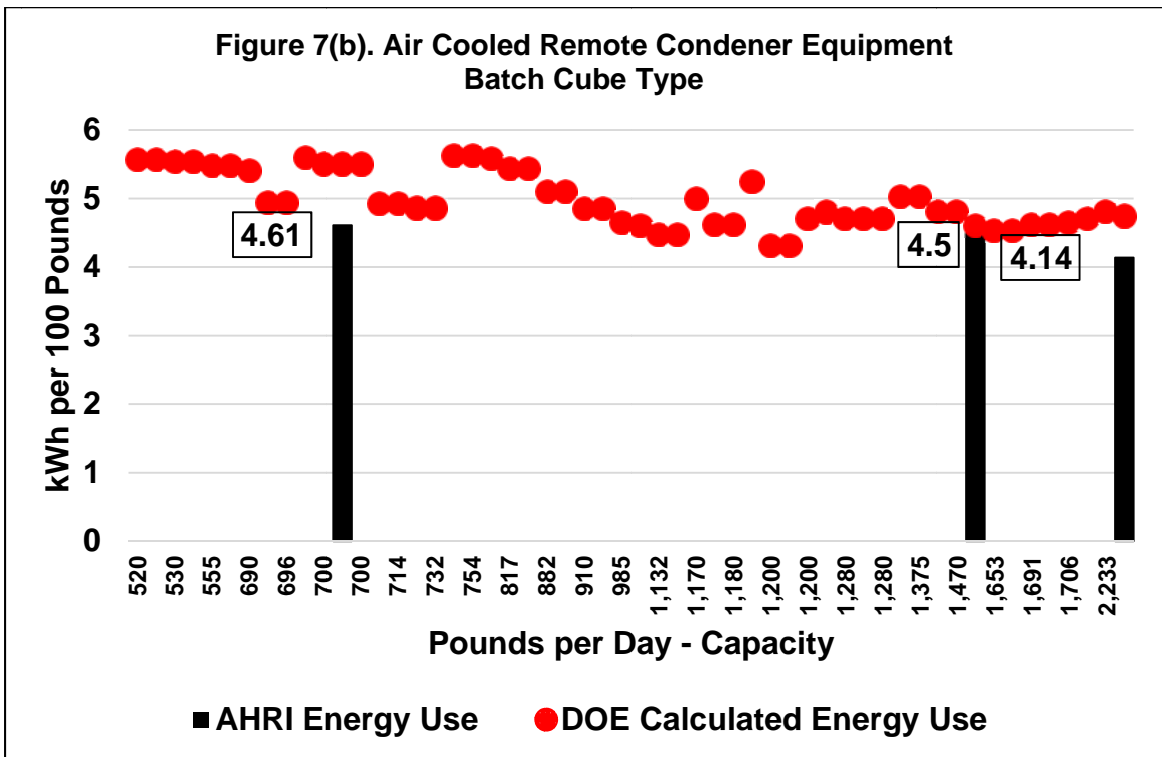
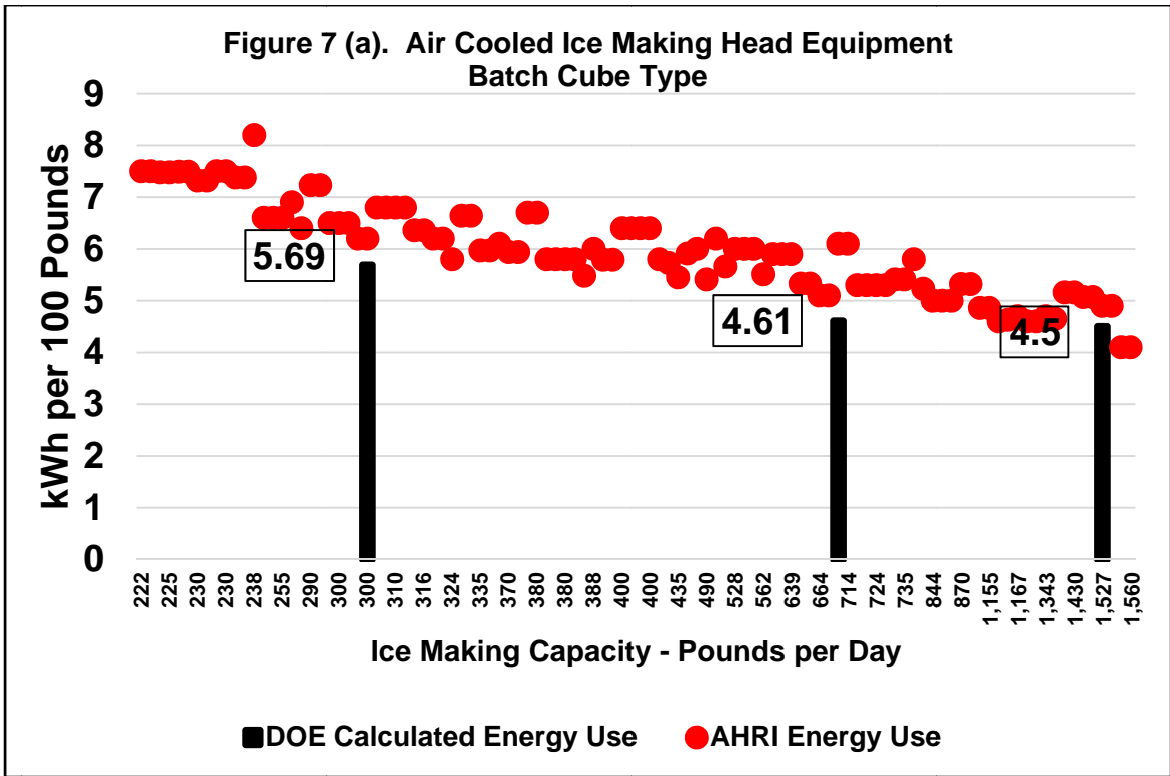
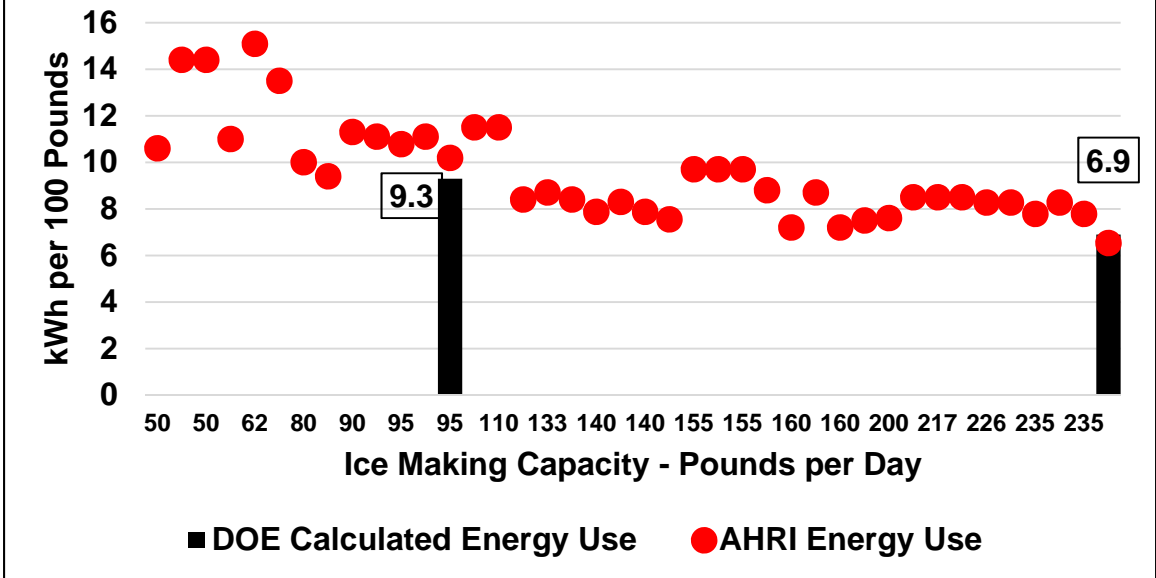


Figure 7(c). Air Cooled Self Contained Equipment
Batch Cube Type



DOE Calculations for Energy and Water Use by Type of Ice Maker

The DOE calculation of energy and cooling water use are shown in Table 3. As the data shows, the electric energy use by air cooled equipment is always higher than that for water. The table also shows the embedded energy resulting from the use of the cooling water.

The ice making capacity is shown in line A, the cooling water use in line B, air cooled ice maker energy use in line C, water cooled ice maker energy use in line D, The difference between air and water cooled ice makers in line E, the energy embedded in the water in line B at 3.0 kWh per thousand gallons in line F, and the true net energy savings with a water cooled ice machine in line G.

Table 3. Summary of DOE Calculated Electric and Cooling Water Use Based on Proposed Standards

Ice Making Head - Cube					
A	Machine Capacity - Pounds per Day		300	700	1,500
B	Water Use - Gallons per 100 lb. of ice	<i>Based on DOE formulas</i>	193.4	184.6	167
C	Air Cooled - kWh per 100 lb. of ice	<i>Based on DOE formulas</i>	5.69	4.61	4.5
D	Water Cooled - kWh per 100 lb. of ice	<i>Based on DOE formulas</i>	4.62	3.74	3.6
E	Net difference between water and air cooled ice makers	<i>kWh per 100 lb. of ice</i>	1.07	0.87	0.9
F	<i>Embedded Energy in Water - kWh per 100 lb. of ice</i>	<i>Assumes 3 kWh/1,000 Gallons</i>	0.58	0.55	0.5
G	<i>Net difference to global energy use</i>	<i>equals net difference – embedded energy</i>	0.49	0.32	0.4
Ice Making Head - Continuous					
A	Machine Capacity - Pounds per Day		300	700	1500
B	Water Use - Gallons per 100 lb. of ice		155	148.31	135
C	Air Cooled - kWh per 100 lb. of ice	<i>Based on DOE formulas</i>	7.23	5	5
D	Water Cooled - kWh per 100 lb. of ice	<i>Based on DOE formulas</i>	5.33	4.33	3.8
E	Net difference between water and air cooled ice makers	<i>Based on DOE formulas</i>	1.9	0.67	1.2
F	<i>Embedded Energy in Water - kWh per 100 lb. of ice</i>	<i>Assumes 3 kWh/1,000 Gallons</i>	0.46	0.44	0.4
G	<i>Net difference to global energy use</i>	<i>equals net difference – embedded energy</i>	1.44	0.23	0.8

Self-Contained Ice Maker - Cube					
A	Machine Capacity - Pounds per Day		100	300	650
B	Water Use - Gallons per 100 lb. of ice	<i>Based on DOE formulas</i>	187.9	181.55	170.5
C	Air Cooled - kWh per 100 lb. of ice	<i>Based on DOE formulas</i>	9.32	6.9	6.9
D	Water Cooled - kWh per 100 lb. of ice	<i>Based on DOE formulas</i>	7.12	5.7	5.7
E	Net difference between water and air cooled ice makers	<i>kWh per 100 lb of ice</i>	2.2	1.2	1.2
F	<i>Embedded Energy in Water - kWh per 100 lb. of ice</i>	<i>Assumes 3 kWh/1,000 Gallons</i>	0.56	0.54	0.51
G	<i>Net difference to global energy use</i>	<i>equals net difference – embedded energy</i>	1.64	0.66	0.69
Self-Contained Ice Maker - Continuous					
A	Machine Capacity - Pounds per Day		100	300	650
B	Water Use - Gallons per 100 lb. of ice	<i>Based on DOE formulas</i>	150.5	145.44	136.6
C	Air Cooled - kWh per 100 lb. of ice	<i>Based on DOE formulas</i>	8.7	7.7	5.95
D	Water Cooled - kWh per 100 lb. of ice	<i>Based on DOE formulas</i>	7.01	6.47	5.53
E	Net difference between water and air cooled ice makers	<i>kWh per 100 lb. of ice</i>	1.69	1.23	0.42
F	<i>Embedded Energy in Water - kWh per 100 lb. of ice</i>	<i>Assumes 3 kWh/1,000 Gallons</i>	0.45	0.44	0.41
G	<i>Net difference to global energy use</i>	<i>equals net difference – embedded energy</i>	1.24	0.79	0.02

The embedded energy in the cooling water was not analyzed by the DOE. Information from several Energy Water Nexus analysis show that energy needed to pump raw water, treat and distribute treated water and collect and treat wastewater can be significant. Although estimates vary from one area of the nation to another, most recent studies show that national

averages are in the range of 2.0 to 6.0 kWh per thousand gallons (water and wastewater combined). For this analysis, a conservative value of 3.0 kWh/kgal was used. Only the ice making head and self-contained equipment can use either air or water. The ice making capacities selected reflect the actual range of equipment available for the type of equipment. As the data shows, much of the advantage of water cooled over air cooled ice makers is abolished by the embedded energy use.

The end user does not see the embedded cost in their energy bill for the ice maker, but embedded costs are paid by the water and wastewater rate payers. In addition,

Table 4			
Table 4. Embedded Energy in Cooling Water			
<i>Based on 3.0 kWh/Kgal.</i>			
Type of Equipment	Ice making capacity – Pounds per day		
	100	300	650
	Embedded Energy kWh/100 Pounds of Ice Made		
Self-Contained Continuous Ice Maker	0.45	0.44	0.41
Self-Contained Cube Type Ice Maker	0.56	0.54	0.51
	300	700	1,500
Ice Making Head Continuous Ice Maker	0.46	0.44	0.40
Ice Making Head Cube Type Ice Maker	0.58	0.55	0.50

Life Cycle Cost Comparison – Air vs. Water Cooled

By not including the cost of water in the life cycle cost analysis, the DOE proposed standards ignores the fact that water cooled equipment is much more expensive to operate than air cooled equipment; and much of that water cost is due to the energy embedded in the water. To illustrate this, the actual DOE calculated energy and water use values were used as the basis for the cost comparison. Electric costs were assumed to be 10.5 cents per kWh even though the 2013 based on DOE Energy Information Administration were slightly lower at 10.34 cents per kWh. Average combined water and wastewater cost for the 50 largest cities in the United States and the combined water and wastewater costs for the city with the lower rates were used to examine life cycle costs. These values were \$9.44 per thousand gallons for the average cost and \$3.72 per thousand gallons for the lowest cost (see figure 5.)

Another consideration is the additional energy needed by the air conditioning system if an air cooled ice maker is located within the conditioned space. This energy into the air conditioned space equals the electrical energy the ice maker uses plus the energy removed from the water as it first cools from tap water temperature to 32°F (sensible energy) and then the latent energy needed to convert the water to ice. It was assumed that the tap water was at 70°F. The latent heat of fusing for water is 144 BTU per Pound, The equation for this is:

Air conditioner load per 100 pounds of ice in BTU's = [3413 x the electrical energy need to operate the ice maker] + [(70-32) X 100] + [144 X 100].

To convert this to ton-hours divide by 12,000.

Most facilities with ice makers are hotels and restaurants. The most common type of air conditioner is the direct expansion (DX) unit. Larger facilities often use chilled water – cooling tower systems. DX systems have a typical energy efficiency of 0.95 to 1.1 kWh/ton-hour and cooling tower systems have a typical efficiency in the 0.6 to 0.8 kWh per ton hour. An assumed air conditioner system of 1.0 kWh/ton-hour was used for the calculations. In reality, the energy use for air conditioning will be less since the ice machine will actually be providing heat in winter months. Therefore the analysis of the difference for an air cooled ice machine in an air conditioned space represents the least advantageous case for air cooled equipment.

The average life of an ice making machine was assumed to be 8.5 years; this parallels that of the DOE analysis.

The analysis of cost is shown in Table 5 (a) which shows water cost at \$3.72/kgal and Table 5(b) which shows water cost at \$9.44/kgal.

Table 5(a). Lifetime Savings With Air Cooled Ice Makers vs. Water Cooled Ice Makers With Lowest Water Cost of 50 Largest Cities in USA - Combined Water and Wastewater Cost (\$3.72/1,000 Gallons)

Type of Ice Maker	Ice Making Capacity (Pounds per Day)	8.5 Year Savings With an Air Cooled Ice Maker	8.5 Year Savings With an Air Cooled Ice Maker in an Air Conditioned Space
Self-Contained Continuous Ice Maker	100	\$692	\$1,785
	300	\$2,213	\$1,749
	650	\$5,777	\$1,849
Self-Contained Cube Type Ice Maker	100	\$957	\$2,726
	300	\$3,631	\$3,094
	650	\$7,040	\$2,689
Ice Making Head Continuous Ice Maker	300	\$2,027	\$1,813
	700	\$6,995	\$2,215
	1500	\$10,088	\$1,574
Ice Making Head Cube Type Ice Maker	300	\$4,168	\$3,643
	700	\$9,471	\$3,410
	1500	\$17,102	\$2,729

Table 5(b). Lifetime Savings With Air Cooled Ice Makers vs. Water Cooled Ice Makers With Average Water Cost of 50 Largest Cities in USA - Combined Water and Wastewater Cost (\$9.44/1,000 Gallons)			
Type of Ice Maker	Ice Making Capacity (Pounds per Day)	8.5 Year Savings With an Air Cooled Ice Maker	8.5 Year Savings With an Air Cooled Ice Maker in an Air Conditioned Space
Self-Contained Continuous Ice Maker	100	\$4,620	\$3,857
	300	\$12,739	\$10,896
	650	\$26,052	\$23,631
Self-Contained Cube Type Ice Maker	100	\$4,453	\$4,785
	300	\$13,565	\$14,779
	650	\$26,039	\$29,922
Ice Making Head Continuous Ice Maker	300	\$13,654	\$11,761
	700	\$32,859	\$28,878
	1500	\$60,091	\$53,422
Ice Making Head Cube Type Ice Maker	300	\$14,465	\$15,947
	700	\$32,403	\$35,862
	1500	\$61,557	\$68,968

As this analysis shows, even at the lowest end of water and wastewater costs and even when the ice maker is in an air conditioned space, it is always less expensive than a water cooled machine with once through cooling.

Appendix A
Calculations

Water Costs per 100 lb. of ice				
At \$9.44/Kgal	Average of 50 largest cities combined water and wastewater rates in 2013	\$1.83	\$1.74	\$1.58
At \$3.72/Kgal.	Lowest of 50 largest cities combined water and wastewater rates in 2013	\$0.72	\$0.69	\$0.62
Energy Cost per 100 lb. of ice	Assumes 10.5 cents per kWh			
Air Cooled Equipment in Air Conditioned Space		\$0.76	\$0.64	\$0.63
Air Cooled Equipment		\$0.60	\$0.48	\$0.47
Water Cooled Equipment		\$0.49	\$0.39	\$0.38
Cost of Additional Energy Use with Air Cooled Equipment per 100 lb.				
Air Cooled Equipment in Air Conditioned Space		\$0.27	\$0.25	\$0.25
Air Cooled		\$0.11	\$0.09	\$0.09

Equipment				
Net Cost Difference per 100 lb. of ice for \$9.44/kgal. water	Water cost minus energy savings with a water cooled ice machine.			
Air Cooled Equipment in Air Conditioned Space		\$1.55	\$1.49	\$1.32
Air Cooled Equipment		\$1.71	\$1.65	\$1.48
Net Cost Difference per 100 lb. of ice for \$3.72/kgal. water				
Air Cooled Equipment in Air Conditioned Space	How much more a water cooled ice maker will cost per 100 lb. of ice	\$0.448	\$0.436	\$0.367
Air Cooled Equipment		\$0.607	\$0.595	\$0.527
Average live time additional cost to end user if Water Cooled Equipment used	Assumes 365 days a year for 8.5t years			
Machine Capacity		300	700	1500
SAVINGS OVER WATER COOLED EQUIPMENT at a water cost of \$9.44/kgal.				

Air Cooled Equipment in Air Conditioned Space		\$14,465	\$32,403	\$61,557
Air Cooled Equipment		\$15,947	\$35,862	\$68,968
<i>SAVINGS OVER WATER COOLED EQUIPMENT at a water cost of \$3.72/kgal.</i>				
Air Cooled Equipment in Air Conditioned Space		\$4,168	\$9,471	\$17,102
Air Cooled Equipment		\$3,643	\$3,410	\$2,729

Ice Making Head - Continuous				
Machine Capacity - Pounds per Day		300	700	1500
Water Use - Gallons per 100 lb. of ice		154.99	148.31	134.95
Air Cooled - kWh per 100 lb. of ice	<i>Based on DOE formulas</i>	7.23	5	5
Water Cooled - kWh per 100 lb. of ice	<i>Based on DOE formulas</i>	5.33	4.33	3.8
Net difference between water and air cooled ice makers	<i>Based on DOE formulas</i>	1.90	0.67	1.20
<i>Embedded Energy in Water - kWh per 100 lb. of ice</i>	<i>Assumes 3 kWh/1,000 Gallons</i>	0.46	0.44	0.40
<i>Net difference to global energy use</i>	<i>equals d-e</i>	1.44	0.23	0.80
Air Conditioning (A/C) Energy Use if Air Cooled Unit in A/C	<i>Assumes A/C is DX unit with 1.0 kWh/Ton-Hr.</i>			
Energy use = Ice make use + latent and sensible heat of water to make ice - Assumes feed water at 70 degrees F	<i>equals energy use + $\{(100*144)+(38*100)/12,000\}$</i>	8.75	6.52	6.52
Water Costs per 100 lb. of ice				

At \$9.44/Kgal	Average of 50 largest cities combined water and wastewater rates in 2013	\$1.46	\$1.40	\$1.27
At \$3.72/Kgal.	Lowest of 50 largest cities combined water and wastewater rates in 2013	\$0.58	\$0.55	\$0.50
Energy Cost per 100 lb. of ice	Assumes 10.5 cents per kWh			
Air Cooled Equipment in Air Conditioned Space		\$0.92	\$0.68	\$0.68
Air Cooled Equipment		\$0.76	\$0.53	\$0.53
Water Cooled Equipment		\$0.56	\$0.45	\$0.40
Cost of Additional Energy Use with Air Cooled Equipment per 100 lb.				
Air Cooled Equipment in Air Conditioned Space		\$0.36	\$0.23	\$0.29
Air Cooled Equipment		\$0.20	\$0.07	\$0.13

Net Cost Difference per 100 lb. of ice for \$9.44/kgal. water	Water cost minus energy savings with a water cooled ice machine.			
Air Cooled Equipment in Air Conditioned Space		\$1.47	\$1.51	\$1.29
Air Cooled Equipment		\$1.26	\$1.33	\$1.15
Net Cost Difference per 100 lb. of ice for \$3.72/kgal. water				
Air Cooled Equipment in Air Conditioned Space	How much more a water cooled ice maker will cost per 100 lb. of ice	\$0.218	\$0.322	\$0.217
Air Cooled Equipment		\$0.377	\$0.481	\$0.376
Average live time additional cost to end user if Water Cooled Equipment used	Assumes 365 days a year for eight years			
Machine Capacity		300	700	1500
SAVINGS OVER WATER COOLED EQUIPMENT at a water cost of \$9.44/kgal.				

Air Cooled Equipment in Air Conditioned Space		\$13,654	\$32,859	\$60,091
Air Cooled Equipment		\$11,761	\$28,878	\$53,422
SAVINGS OVER WATER COOLED EQUIPMENT at a water cost of \$3.72/kgal.				
Air Cooled Equipment in Air Conditioned Space		\$2,027	\$6,995	\$10,088
Air Cooled Equipment		\$1,813	\$2,215	\$1,574

Self-Contained Ice Maker - Cube				
Machine Capacity - Pounds per Day		100	300	650
Water Use - Gallons per 100 lb. of ice	<i>Based on DOE formulas</i>	187.85	181.55	170.525
Air Cooled - kWh per 100 lb. of ice	<i>Based on DOE formulas</i>	9.32	6.90	6.90
Water Cooled - kWh per 100 lb. of ice	<i>Based on DOE formulas</i>	7.12	5.70	5.70
Net difference between water and air cooled ice makers	<i>kWh per 100 lb of ice</i>	2.20	1.20	1.20
<i>Embedded Energy in Water - kWh per 100 lb. of ice</i>	<i>Assumes 3 kWh/1,000 Gallons</i>	0.56	0.54	0.51
<i>Net difference to global energy use</i>	<i>equals d-e</i>	1.64	0.66	0.69
Air Conditioning (A/C) Energy Use if Air Cooled Unit in A/C	<i>Assumes A/C is DX unit with 1.0 kWh/Ton-Hr.</i>			
Energy use = Ice make use + latent and sensible heat of water to make ice - Assumes feed water at 70 degrees F	<i>equals energy use + $\{(100*144)+(38*100)/12,000\}$</i>	10.84	8.42	8.42
Water Costs per 100 lb. of ice				

At \$9.44/Kgal	Average of 50 largest cities combined water and wastewater rates in 2013	\$1.77	\$1.71	\$1.61
At \$3.72/Kgal.	Lowest of 50 largest cities combined water and wastewater rates in 2013	\$0.70	\$0.68	\$0.63
Energy Cost per 100 lb. of ice	Assumes 10.5 cents per kWh			
Air Cooled Equipment in Air Conditioned Space		\$1.14	\$0.88	\$0.88
Air Cooled Equipment		\$0.98	\$0.72	\$0.72
Water Cooled Equipment		\$0.75	\$0.60	\$0.60
Cost of Additional Energy Use with Air Cooled Equipment per 100 lb.				
Air Cooled Equipment in Air Conditioned Space		\$0.39	\$0.29	\$0.29
Air Cooled Equipment		\$0.23	\$0.13	\$0.13

Net Cost Difference per 100 lb, of ice for \$9.44/kgal. water	Water cost minus energy savings with a water cooled ice machine.			
Air Cooled Equipment in Air Conditioned Space		\$1.44	\$1.46	\$1.29
Air Cooled Equipment		\$1.54	\$1.59	\$1.48
Net Cost Difference per 100 lb, of ice for \$3.72/kgal. water				
Air Cooled Equipment in Air Conditioned Space	How much more a water cooled ice maker will cost per 100 lb. of ice	\$0.309	\$0.390	\$0.349
Air Cooled Equipment		\$0.468	\$0.549	\$0.508
Average live time additional cost to end user if Water Cooled Equipment used	Assumes 365 days a year for eight years			
Machine Capacity		100	300	650
SAVINGS OVER WATER COOLED EQUIPMENT at a water cost of \$9.44/kgal.				

Self-Contained Ice Maker - Continuous				
Machine Capacity - Pounds per Day		100	300	650
Water Use - Gallons per 100 lb. of ice	<i>Based on DOE formulas</i>	150.48	145.44	136.62
Air Cooled - kWh per 100 lb. of ice	<i>Based on DOE formulas</i>	8.70	7.70	5.95
Water Cooled - kWh per 100 lb. of ice	<i>Based on DOE formulas</i>	7.01	6.47	5.53
Net difference between water and air cooled ice makers	<i>kWh per 100 lb. of ice</i>	1.69	1.23	0.42
<i>Embedded Energy in Water - kWh per 100 lb. of ice</i>	<i>Assumes 3 kWh/1,000 Gallons</i>	0.45	0.44	0.41
<i>Net difference to global energy use</i>	<i>equals d-e</i>	1.24	0.79	0.02
Air Conditioning (A/C) Energy Use if Air Cooled Unit in A/C	<i>Assumes A/C is DX unit with 1.0 kWh/Ton-Hr.</i>			
Energy use = Ice make use + latent and sensible heat of water to make ice - Assumes feed water at 70 degrees F	<i>equals energy use + $\{(100*144)+(38*100)/12,000\}$</i>	10.22	9.22	7.47
Water Costs per 100 lb. of ice				

At \$9.44/Kgal	Average of 50 largest cities combined water and wastewater rates in 2013	\$1.42	\$1.37	\$1.29
At \$3.72/Kgal.	Lowest of 50 largest cities combined water and wastewater rates in 2013	\$0.56	\$0.54	\$0.51
Energy Cost per 100 lb. of ice	Assumes 10.5 cents per kWh			
Air Cooled Equipment in Air Conditioned Space		\$1.07	\$0.97	\$0.78
Air Cooled Equipment		\$0.91	\$0.81	\$0.62
Water Cooled Equipment		\$0.74	\$0.68	\$0.58
Cost of Additional Energy Use with Air Cooled Equipment per 100 lb.				
Air Cooled Equipment in Air Conditioned Space		\$0.34	\$0.29	\$0.20
Air Cooled Equipment		\$0.18	\$0.13	\$0.04

Net Cost Difference per 100 lb. of ice for \$9.44/kgal. water	Water cost minus energy savings with a water cooled ice machine.			
Air Cooled Equipment in Air Conditioned Space		\$1.49	\$1.45	\$1.37
Air Cooled Equipment		\$1.24	\$1.24	\$1.25
Net Cost Difference per 100 lb. of ice for \$3.72/kgal. water				
Air Cooled Equipment in Air Conditioned Space	How much more a water cooled ice maker will cost per 100 lb. of ice	\$0.223	\$0.253	\$0.304
Air Cooled Equipment		\$0.382	\$0.412	\$0.464
Average live time additional cost to end user if Water Cooled Equipment used	Assumes 365 days a year for eight years			
Machine Capacity		300	700	1500
SAVINGS OVER WATER COOLED EQUIPMENT at a water cost of \$9.44/kgal.				

Air Cooled Equipment in Air Conditioned Space				
			\$4,620	\$12,739
			\$26,052	
Air Cooled Equipment				
			\$3,857	\$10,896
			\$23,631	
SAVINGS OVER WATER COOLED EQUIPMENT at a water cost of \$3.72/kgal.				
Air Cooled Equipment in Air Conditioned Space				
			\$692	\$2,213
			\$5,777	
Air Cooled Equipment				
			\$1,785	\$1,749
			\$1,849	

Appendix B

List of Currently Available Ice Makers from the Air Conditioning, Heating, and Refrigeration Institute (AHRI)

Water Cooled Continuous Type Ice Makers									
Manufacturer	Trade/Brand Name	Unit Type	Model	Ice Harvest Rate	Potable Water Use Rate	Condenser Water Use Rate	Energy Consumption Rate	Ice Hardness Factor	AHRI Type
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-1001MWH	750	12	64	4	74.1	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-1001MWH-C	703	12	70	4.1	80.8	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-1500MWH	1182	12	57	3.62	65.4	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-1500MWH-C	924	12	65	4.55	74.2	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-2000MWH	1642	12	70	3.68	65.5	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-2000MWH-C	1480	12	76	4.23	80	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-801MWH	635	12	60	3.6	75.1	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-801MWH-C	508	12	64	4.48	82.3	IMH-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	F0522W-1#	420	12	82	3.9	58	IMH-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	F0822W-1#	600	12	102	3.9	62	IMH-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	F0822W-32#	600	12	102	3.9	62	IMH-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	F1522W-32#	1200	12	70	3.3	58	IMH-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	N0422W-1#	350	12	93	4.9	74	IMH-W

SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	N0622W-1#	570	12	102	4.4	74	IMH- W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	N0922W-32#	875	12	130	3.7	74	IMH- W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	N1322W-3#	965	12	81	4	74	IMH- W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	N1322W-32#	965	12	81	4	74	IMH- W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	DCM-500BWH	470	12	72	5	85	SC- W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	DCM- 500BWH-OS	470	12	72	5	83	SC- W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	DCM-751BWH	631	12	76	4.77	88.9	SC- W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	DCM- 751BWH-OS	631	12	76	4.77	88.9	SC- W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	AFE424W-1#	300	12	131	5.5	57	SC- W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	MDT5N25WS- 1#	455	12	110	4	75	SC- W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	MDT5N40WS- 1#	455	12	110	4	75	SC- W

Water Cooled Cube Type Ice Makers

Manufacturer	Trade/Brand Name	Unit Type	Model	Ice Harvest Rate	Potable Water Use Rate	Condenser Water Use Rate	Energy Consumption Rate	Ice Hardness Factor	AHRI Type
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-1301SWH	1323	19.4	118	3.2	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-1301SWH3	1300	19.1	119	3.4	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-1340MWH	1327	21	108	3.6	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-1601SWH	1523	24.5	98	3.8	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-1601SWH3	1565	23.8	100	3.66	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-1900SWH	1850	18.8	99	3.1	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-1900SWH3	1814	18.8	99	3.3	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-2100SWH3	2050	20	95	3.35	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-2500SWH3	2365	19.4	101	3.78	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-320MWH	337	16.8	157	5.2	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-515MWH	446	23	106	5.14	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-650MWH	620	22.3	120	4.1	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-901MWH	864	20.8	128	4.5	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMD-410MWH	382	23.2	145	4.3	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMD-450MWH	415	17.8	126	4.55	100	IMH-W

HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMD-850MWH	815	20.2	127	4.1	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMD-901MWH	870	24.5	125	4.2	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMH-2000SWH	1747	18.4	89	3.26	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMH-2000SWH3	1671	17.9	82	3.43	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KML-250MWH	284	43.7	123	6.23	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KML-351MWH	327	20.4	131	5.3	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KML-451MWH	414	20.9	104	5.5	100	IMH-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KML-631MWH	616	22	170	4.7	100	IMH-W
MANITOWOC FSG OPERATION S, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0303W-161	260	20	193	5.69	100	IMH-W
MANITOWOC FSG OPERATION S, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0303W-261	260	20	193	5.69	100	IMH-W
MANITOWOC FSG OPERATION S, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0323W-161	270	23.9	193	6.19	100	IMH-W
MANITOWOC FSG OPERATION S, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0323W-261	270	23.9	193	6.19	100	IMH-W
MANITOWOC FSG OPERATION S, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0453W-161	360	20	169	4.7	100	IMH-W
MANITOWOC FSG OPERATION S, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0453W-261	360	20	169	4.7	100	IMH-W
MANITOWOC FSG OPERATION S, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0503W-161	430	19.9	165	4.58	100	IMH-W

MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0503W-261	430	19.9	165	4.58	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0523W-161	375	23.8	190	5.09	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0523W-261	375	23.8	190	5.09	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0606W-261	575	20	140	4.44	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1003W-261	855	19.8	180	4.23	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1003W3-263	855	19.8	180	4.23	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1203W-261	900	20.7	169	4.58	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1203W3-263	900	20.7	169	4.58	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1403W-261	1275	23.5	154	3.85	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1403W3-263	1275	23.5	154	3.85	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1803W-261	1640	22.3	163	3.93	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1803W3-263	1640	22.3	163	3.93	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID0906W-261	701	19	145	4.35	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID0906W3-263	701	19	145	4.35	100	IMH-W

MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IR-0501W-161	420	19.9	165	4.58	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IR-0501W-261	420	19.9	165	4.58	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IR-0521W-161	350	23.8	190	5.19	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IR-0521W-261	350	23.8	190	5.19	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IR0906W-261	683	19	145	4.32	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IR0906W3-263	683	19	145	4.32	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0305W-161	260	20	193	5.69	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0305W-261	260	20	193	5.69	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0325W-161	290	23.9	193	5.94	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0325W-261	290	23.9	193	5.94	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0455W-161	360	20	169	4.7	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0455W-261	360	20	169	4.7	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0505W-161	440	19.9	165	4.52	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0505W-261	440	19.9	165	4.52	100	IMH-W

MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0525W-161	395	23.8	190	4.87	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0525W-261	395	23.8	190	4.87	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0606W-261	580	20	140	4.45	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0855W-261	730	20	150	4.52	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0855W3-263	730	20	150	4.52	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-1005W-261	870	19.8	180	4.07	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-1005W3-263	870	19.8	180	4.07	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-1205W-261	1010	20.7	169	4.4	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-1205W3-263	1010	20.7	169	4.4	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-1405W-261	1290	23.5	154	3.86	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-1405W3-263	1290	23.5	154	3.86	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-1805W-261	1650	22.3	163	3.92	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-1805W3-263	1650	22.3	163	3.92	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY0906W-261	786	19	145	4.04	100	IMH-W

MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY0906W3-263	786	19	145	4.04	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	SD-3303W3	2620	19.7	174	3.9	100	IMH-W
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	SY-3305W3	2784	19.7	174	3.67	100	IMH-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0322MW-1#	280	18.3	163	5.2	100	IMH-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0322SW-1#	280	18.3	163	5.2	100	IMH-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0330MW-1#	300	18.5	163	5.2	100	IMH-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0330SW-1#	300	18.5	163	5.2	100	IMH-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0522MW-1#	456	18.4	160	4.7	100	IMH-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0522MW-1#, -32#	480	18.4	160	4.7	100	IMH-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0522SW-1#	456	18.4	160	4.7	100	IMH-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0522SW-1#, -32	480	18.4	160	4.7	100	IMH-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0530MW-1#	480	18.4	160	4.7	100	IMH-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0530MW-1C	410	18	160	5	100	IMH-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0530SW-1#	480	18.4	160	4.7	100	IMH-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0530SW-1C	410	18	160	5	100	IMH-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0630MW-32#	650	18.6	185	4.1	100	IMH-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0630SW-32#	650	18.6	185	4.1	100	IMH-W

SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0830MW-32#	832	18.9	136	4	100	IMH- W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0830SW-32#	832	18.9	136	4	100	IMH- W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1030MW-32#	851	19.7	153	4.4	100	IMH- W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1030SW-32#	851	19.7	153	4.4	100	IMH- W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1448MW-3#, -32#	1300	18.3	130	3.7	100	IMH- W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1448SW-32#	1300	18.3	130	3.7	100	IMH- W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1848SW-3#	1710	18	151	3.7	100	IMH- W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	DKM-500BWH	439	26.7	138	5.1	100	SC-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-151BWH	130	25	140	7.3	100	SC-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-201BWH	181	24	141	6.17	100	SC-W
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-260BWH	237	26.3	121	6.37	100	SC-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	CU1526MW-1#	124	18	160	8.8	100	SC-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	CU1526SW-1#	124	18	160	8.8	100	SC-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	CU2026SW-1#	190	18	180	6.6	100	SC-W
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	CU3030SW-1#	285	18	180	5.5	100	SC-W

Air Cooled Continuous Type Ice Makers

Manufacturer	Trade/Brand Name	Unit Type	Model	Ice Harvest Rate	Potable Water Use Rate	Condenser Water Use Rate	Energy Consumption Rate	Ice Hardness Factor	AHRI Type
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-1001MAH	748	12		4.52	73.6	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-1001MAH-C	656	12		5.27	75.6	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-1500MAH	1110	12		4.03	66.6	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-1500MAH-C	939	12		5.36	80.8	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-450MAH	359	12		5.7	73.2	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-450MAH-C	312	12		6.69	76	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-801MAH	568	12		4.33	72.2	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-801MAH-C	531	12		4.68	80.8	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	FD-1001MAH-C	677	12		4.79	85.9	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	FD-650MAH-C	474	12		5.35	86	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-1001MLH	871	12		1.89	73.8	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-1001MRH	713	12		4.73	66.9	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-1001MRH-C	683	12		5.25	81.1	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-1500MRH	1237	12		3.85	65.4	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-1500MRH-C	1064	12		4.35	76.2	RCU-A

HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-2000MLH	1733	12	0.6	69.2	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-2000MRH	1592	12	4.19	63.4	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-2000MRH-C	1416	12	4.79	81.2	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-2000MRH3	1608	12	4.33	67.2	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	FD-1001MRH-C	683	12	5.08	81.1	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	FS-1001MLH-C	668	12	6.26	85.4	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	FS-1022MLH-C	668	12	6.26	85.4	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	FS-1500MLH-C	1165	12	4.72	78.1	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	C-100BAF	62	12	12	81.6	SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	C-100BAF-AD	62	12	12	81.6	SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	C-100BAF-ADDS	62	12	12	81.6	SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	C-100BAF-DS	62	12	12	81.6	SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	C-101BAH	62	12	12.1	81.6	SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	C-101BAH-AD	62	12	12.1	81.6	SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	C-101BAH-ADDS	62	12	12.1	81.6	SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	C-101BAH-DS	62	12	12.1	81.6	SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	DCM-270BAH	200	12	8.16	83	SC-A

HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	DCM-270BAH-OS	209	12	8.16	83 SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	DCM-300BAH	219	12	7.06	80.7 SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	DCM-300BAH-OS	219	12	7.06	80.7 SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	DCM-500BAH	427	12	5.85	83.6 SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	DCM-500BAH-OS	427	12	5.85	83.6 SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	DCM-751BAH	553	12	6.24	87.9 SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	DCM-751BAH-OS	553	12	6.24	87.9 SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-300BAF	230	12	6.75	69.8 SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-330BAH	238	12	6.09	75.4 SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-330BAH-C	222	12	7.01	84.5 SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Continuous Type Ice Maker	F-500BAF	358	12	6.04	72.6 SC-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	F0522A-1#	320	12	6.1	65 IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	F0822A-1#	580	12	4.7	60 IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	F1222A-3#	825	12	3.9	55 IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	F1222A-32#	825	12	3.9	55 IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	F1522A-32#	1100	12	3.7	58 IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	FME2404AS-3#	1400	12	4	57 IMH-A

SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	FME2404AS-32#	1400	12	4	57	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	N0422A-1#	310	12	6.3	74	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	N0622A-1#	500	12	5.6	74	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	N0622A-32#	500	12	5.6	74	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	N0922A-32#	765	12	4.7	74	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	N1322A-32#	950	12	4.4	74	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	F0822R-1#	610	12	5.1	67	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	F1222R-3#	1050	12	3.4	60	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	F1222R-32#	1050	12	3.4	60	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	N0622R-1#	530	12	5.7	74	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	N0922R-32#	835	12	4	74	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	N1322R-32#	1030	12	4	74	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	NME1854RS-32#	1575	12	4.5	75	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	AFE424A-1#	250	12	6	57	SC-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	MDT2C12A-1#	198	12	7	75	SC-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	MDT3F12A-1#	250	12	6	57	SC-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	MDT4F12A-1#	351	12	6	59	SC-A

SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	MDT5N25AS-1#	365	12	6.8	75 SC-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	MDT5N40AS-1#	365	12	6.8	75 SC-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Continuous Type Ice Maker	MDT6N90AS-1#	520	12	5.6	76 SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RF0244A-161	151	12	7.37	65 SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RF0266A-161	151	12	7.37	65 SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RF0385A-161	273	12	6.32	72 SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RF0399A-161	273	12	6.32	72 SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RF0644A-161	510	12	5.13	71 SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RNS0244A-161	117	12	9.45	86 SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RNS0385A-161	248	12	6.89	86 SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RNS12A-161	187	12	8.55	80 SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RNS20A-161	187	12	8.55	80 SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RF2378C-261	1702	12	3.87	68 RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RFS1278C-261	958	12	3.98	72 RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RFS2378C-261	1702	12	3.87	68 RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RN1078C-161	713	13.6	5.44	82 RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RN1278C-161	962	13.2	4.93	88 RCRC-A

MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RF2300A-263	1665	12	5.99	71	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RFS0300A-161	286	12	6.65	67	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RFS0650A-161	530	12	5.08	70	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RFS0650A-261	540	12	4.74	70	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RFS1200A-261	874	12	5.7	70	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RN0408A-161	294	12.6	6.38	85	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RN1008A-261	821	13.6	5.51	86	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RN1408A-261	979	13.2	5.57	84	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Continuous Type Ice Maker	RNS0308A-161	251	12	8.2	85	IMH-A

Air Cooled Cube Type Ice Makers

Manufacturer	Trade/Brand Name	Unit Type	Model	Ice Harvest Rate	Potable Water Use Rate	Condenser Water Use Rate	Energy Consumption Rate	Ice Hardness Factor	AHRI Type
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	IM-500SAA	435	19.8		5.45	100	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-1301SAH	1164	15.7		4.63	100	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-1301SAH3	1159	15.6		4.6	100	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-1340MAH	1167	18.3		4.7	100	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-1601SAH	1343	17		4.7	100	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-1601SAH3	1345	18.5		4.65	100	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-1900SAH	1560	18.8		4.1	100	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-1900SAH3	1530	17		4.1	100	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-320MAH	278	18.4		6.9	100	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-515MAH	450	18.5		5.91	100	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-600MAH	503	19.7		5.66	100	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-650MAH	562	18		5.51	100	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-901MAH	813	16		5.23	100	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMD-410MAH	324	22.6		5.8	100	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMD-450MAH	387	18.9		5.48	100	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMD-850MAH	639	19.5		5.9	100	IMH-A

HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMD-901MAH	801	20		5.8	100	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KML-250MAH	238	35.2		8.2	100	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KML-351MAH	282	20.3		6.4	100	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KML-451MAH	349	18		6.1	100	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KML-631MAH	497	26		6.2	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0302A-161	225	20		7.48	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0302A-261	225	20		7.48	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0322A-161	225	23.9		7.49	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0322A-261	225	23.9		7.49	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0452A-161	316	20		6.36	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0452A-261	316	20		6.36	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0502A-161	390	19.9		5.79	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0502A-261	390	19.9		5.79	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0522A-161	335	23.8		6.64	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0522A-261	335	23.8		6.64	100	IMH-A

MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0606A-261	490	20		5.41	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1002A-261	735	19.8		5.41	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1002A3-263	735	19.8		5.41	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1202A-261	870	20.7		5.32	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1202A3-263	870	20.7		5.32	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1402A-261	1155	23.5		4.86	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1402A3-263	1155	23.5		4.86	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1802A-261	1430	22.3		5.16	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1802A3-263	1430	22.3		5.16	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID0906A-261	664	19		5.1	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID0906A3-263	664	19		5.1	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IR-0500A-161	370	19.9		5.94	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IR-0500A-261	370	19.9		5.94	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IR-0520A-161	290	23.8		7.23	100	IMH-A

MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IR-0520A- 261	290	23.8		7.23	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IR-1800A- 261	1430	22.3		5.07	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IR-1800A3- 263	1430	22.3		5.07	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IR0906A- 261	639	19		5.33	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IR0906A3- 263	639	19		5.33	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0304A- 161	235	20		7.38	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0304A- 261	235	20		7.38	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0324A- 161	230	23.9		7.32	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0324A- 261	230	23.9		7.32	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0454A- 161	335	20		5.97	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0454A- 261	335	20		5.97	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0504A- 161	410	19.9		5.73	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0322MA- 1#	255	19		6.6	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0322MA- 32#	255	19		6.6	100	IMH-A

SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0322SA-1#	255	19		6.6	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0330MA- 1#	300	18		6.5	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0330MA- 32#	300	18		6.5	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0330SA-1#	300	18		6.5	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0522MA- 1#, -32#	380	18.5		6.7	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0522SA- 1#, -32#	380	18.5		6.7	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0530MA- 1#	400	18.8		6.4	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0530MA- 1C	380	18		5.8	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0530MA- 32#	400	18.8		6.4	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0530MA- 32C	380	18		5.8	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0530SA-1#	400	18.8		6.4	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0530SA- 1C	380	18		5.8	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0530SA- 32#	400	18.8		6.4	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0530SA- 32C	380	18		5.8	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0630MA- 32#	528	19.1		6	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0630SA- 32#	528	19.1		6	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0722MA- 32#	590	18		5.9	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0722SA- 32#	590	18		5.9	100	IMH-A

SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0830MA- 3#	724	21.6		5.3	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0830MA- 32#	724	21.6		5.3	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0830SA-3#	724	21.6		5.3	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0830SA- 32#	724	21.6		5.3	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1030MA- 3#	844	18.4		5	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1030MA- 32#	844	18.4		5	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1030SA- 32#	844	18.4		5	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1448MA- 32#	1242	18.5		4.6	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1448SA- 3#, -32#	1242	18.5		4.6	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1848MA- 32#	1527	19.3		4.9	100	IMH-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1848SA- 3#, -32#	1527	19.3		4.9	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	KOOLAIRE	Cubes Type Ice Maker	KD0250A- 161	222	22		7.5	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	KOOLAIRE	Cubes Type Ice Maker	KD0250A- 261	222	22		7.5	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	KOOLAIRE	Cubes Type Ice Maker	KD0350A- 161	300	22		6.2	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	KOOLAIRE	Cubes Type Ice Maker	KD0350A- 261	300	22		6.2	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	KOOLAIRE	Cubes Type Ice Maker	KD0420A- 161	305	21		6.8	100	IMH-A

MANITOWOC FSG OPERATIONS, LLC	KOOLAIRE	Cubes Type Ice Maker	KD0420A- 261	305	21		6.8	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	KOOLAIRE	Cubes Type Ice Maker	KD0500A- 161	388	21		6	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	KOOLAIRE	Cubes Type Ice Maker	KD0600A- 261	485	21		6	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	KOOLAIRE	Cubes Type Ice Maker	KD1000A- 261	714	20		6.1	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	KOOLAIRE	Cubes Type Ice Maker	KY0250A- 161	230	22		7.5	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	KOOLAIRE	Cubes Type Ice Maker	KY0250A- 261	230	22		7.5	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	KOOLAIRE	Cubes Type Ice Maker	KY0350A- 161	320	22		6.2	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	KOOLAIRE	Cubes Type Ice Maker	KY0350A- 261	320	22		6.2	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	KOOLAIRE	Cubes Type Ice Maker	KY0420A- 161	310	21		6.8	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	KOOLAIRE	Cubes Type Ice Maker	KY0420A- 261	310	21		6.8	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	KOOLAIRE	Cubes Type Ice Maker	KY0500A- 161	405	21		5.8	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	KOOLAIRE	Cubes Type Ice Maker	KY0600A- 261	538	21		6	100	IMH-A
MANITOWOC FSG OPERATIONS, LLC	KOOLAIRE	Cubes Type Ice Maker	KY1000A- 261	714	20		6.1	100	IMH-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMS- 1122MLH	1000	19.5		4.6	100	RCRC- A

HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMS-1122MLH	985	19.5		4.65	100	RCRC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMS-1401MLH	1200	24.5		5.25	100	RCRC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMS-1401MLH	1170	26.5		5	100	RCRC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMS-1401MLJ	1280	19.5		4.7	100	RCRC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMS-1401MLJ	1280	20		4.7	100	RCRC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMS-1401MLJ	1280	19.5		4.7	100	RCRC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMS-2000MLH	1706	23.3		4.65	100	RCRC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMS-2000MLH	1786	22		4.7	100	RCRC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMS-750MLH	700	15.6		5.6	100	RCRC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMS-822MLH	774	19.3		5.58	100	RCRC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMS-830MLH	690	16		5.4	100	RCRC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMS-830MLH	700	16		5.5	100	RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IB-1094YC-161	910	20		4.85	100	RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IB-1094YC-161	910	20		4.85	100	RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IB0696YC-161	555	20		5.48	100	RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IB0696YC-161	555	20		5.48	100	RCRC-A

MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IB0894YC-161	732	19.6		4.86	100	RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IB0894YC-161	732	19.6		4.86	100	RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0686C-161	520	20		5.57	100	RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0686C-161	520	20		5.57	100	RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1872C-161	1375	17.7		5.03	100	RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1872C-161	1375	17.7		5.03	100	RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID0976C-161	696	19		4.94	100	RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID0976C-161	696	19		4.94	100	RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID1072C-161	754	20.6		5.63	100	RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID1072C-161	754	20.6		5.63	100	RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID1472C-161	1132	20		4.47	100	RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID1472C-161	1132	20		4.47	100	RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID2176C-161	1653	17.4		4.53	100	RCRC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID2176C-161	1653	17.4		4.53	100	RCRC-A

MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0686C- 161	530	20		5.54	100	RCRC- A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0686C- 161	530	20		5.54	100	RCRC- A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-1474C- 161	1180	20		4.62	100	RCRC- A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-1474C- 161	1180	20		4.62	100	RCRC- A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-1874C- 161	1470	17.7		4.81	100	RCRC- A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-1874C- 161	1470	17.7		4.81	100	RCRC- A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY0976C- 161	714	19		4.93	100	RCRC- A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY0976C- 161	714	19		4.93	100	RCRC- A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY1074C- 161	817	20.6		5.43	100	RCRC- A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY1074C- 161	817	20.6		5.43	100	RCRC- A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY1474C- 161	1200	20		4.31	100	RCRC- A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY1474C- 161	1200	20		4.31	100	RCRC- A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY2176C- 161	1691	17.4		4.62	100	RCRC- A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY2176C- 161	1691	17.4		4.62	100	RCRC- A

MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	SD-3072C	2233	19.7		4.81	100	RCRC- A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	SY-3074C	2299	19.7		4.74	100	RCRC- A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	EH222SL-1#	700	18		5.5	100	RCRC- A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	EH222SL-1#	700	18		5.5	100	RCRC- A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	EH222SL-1#	882	18		5.1	100	RCRC- A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	EH222SL-1#	882	18		5.1	100	RCRC- A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	EH330SL-1#	1230	17.4		4.8	100	RCRC- A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	EH430SL-1#	1200	18.5		4.7	100	RCRC- A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	EH430SL-1#	1567	17.6		4.6	100	RCRC- A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0696N- 261	565	20		5.76	100	RCU-
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY0996N3- 263	752	19		4.9	100	RCU-
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM- 1301SRH	1222	16.6		4.1	100	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM- 1301SRH3	1197	16		4.3	100	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM- 1340MRH	1251	18.3		4.5	100	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM- 1601MRH	1417	18.6		4.64	100	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM- 1601MRH3	1391	19.2		4.55	100	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM- 1601SRH	1490	23.6		4.36	100	RCU-A

HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-1601SRH3	1498	23.2		4.46	100	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-1900SRH	1640	20		4.09	100	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-1900SRH3	1650	20.9		4.04	100	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-2100SRH3	1810	21.1		4.26	100	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-2500SRH3	2235	18.6		4.5	100	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-515MRH	452	20.8		5.8	100	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-650MRH	564	16.5		5.6	100	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-901MRH	785	19.3		5.4	100	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-901MRH3	815	18		5.4	100	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMD-850MRH	691	19.5		5.4	100	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMD-901MRH	775	20		5.3	100	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMH-2000SRH	1677	17.6		3.75	100	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KMH-2000SRH3	1682	18		3.88	100	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KML-631MRH	589	24		5.3	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0592N-161	430	19.9		5.79	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-0696N-261	535	20		5.85	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1092N-261	725	19.8		5.5	100	RCU-A

MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1092N3-263	725	19.8		5.5	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1492N-261	1220	23.5		4.52	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1492N3-263	1220	23.5		4.52	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1892N-261	1495	22.3		4.96	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID-1892N3-263	1495	22.3		4.96	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID0996N-261	727	19		4.91	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	ID0996N3-263	727	19		4.91	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IR-1890N-261	1420	22.3		4.99	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IR-1890N3-263	1420	22.3		4.99	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IR0996N-261	665	19		5.29	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IR0996N3-263	665	19		5.29	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-0594N-161	440	19.9		5.73	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-1094N-261	775	19.8		5.28	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-1094N3-263	775	19.8		5.28	100	RCU-A

MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-1494N- 261	1230	23.5		4.52	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-1494N3- 263	1230	23.5		4.52	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-1894N- 261	1465	22.3		5.06	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY-1894N3- 263	1465	22.3		5.06	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	IY0996N- 261	752	19		4.9	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0530MR- 1C	400	18		6.5	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0530SR-1#	460	18.2		6.5	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0530SR- 1C	400	18		6.5	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0630MR- 32#	616	18.7		5.8	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0630SR- 32#	616	18.7		5.8	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0830MR- 32#	780	18.4		4.7	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0830SR- 3#, -32#	780	18.4		4.7	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C0830SR- 32#	780	18.4		4.7	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1030MR- 32#	851	18.2		5	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1030SR-3#	851	18.2		5	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1030SR- 32#	851	18.2		5	100	RCU-A

SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1448MR- 32#	1221	18.7		4.61	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1448SR-3#	1221	18.7		4.8	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1448SR- 32#	1221	18.7		4.61	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1848MR- 32#	1645	17.9		4.3	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1848SR-3#	1645	17.9		4.3	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C1848SR- 32#	1645	17.9		4.3	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C2148MR- 32#	1849	18.2		4.9	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C2148SR- 3#, -32#	1849	18.2		4.9	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C2648MR- 3#	2256	17		4.34	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	C2648SR-3#	2224	17.7		4.5	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	EH222SL-1#	700	18		5.2	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	EH222SL-1#	700	18		5.2	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	EH222SL-1#	865	18		5	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	EH222SL-1#	865	18		5	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	EH330SL-1#	1200	18		5	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	EH430SL-1#	1200	18		4.5	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	EH430SL-1#	1200	18		4.5	100	RCU-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	EH430SL-1#	1600	18		4.67	100	RCU-A

MANITOWOC FSG OPERATIONS, LLC	KOOLAIRE	Cubes Type Ice Maker	KD1000N- 261	724	20		5.4	100	RCU-A
MANITOWOC FSG OPERATIONS, LLC	KOOLAIRE	Cubes Type Ice Maker	KY1000N- 261	770	20		5.4	100	RCU-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	DKM- 500BAH	436	22.4		6.53	100	SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-101BAH	88	23		9.4	100	SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-151BAH	121	17.8		8.4	100	SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-201BAH	165	22		7.5	100	SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-260BAH	200	20.3		7.6	100	SC-A
HOSHIZAKI AMERICA, INC.	HOSHIZAKI	Cubes Type Ice Maker	KM-61BAH	50	20.6		10.6	100	SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	QM-45A	62	38.6		15.09	100	SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	UD0140A- 161	95	24.4		11.1	100	SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	UD0140A- 261	95	24.4		10.78	100	SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	UD0190A- 161	140	23.9		8.4	100	SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	UD0190A- 261	140	23.9		7.87	100	SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	UD0240A- 161	160	23.4		8.8	100	SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	UD0240A- 261	160	23.4		7.2	100	SC-A

MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	UD0310A-161	235	23.5		8.27	100	SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	UD0310A-261	235	23.5		7.78	100	SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	UR0140A-161	90	23.3		11.3	100	SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	UR0190A-161	133	21.3		8.7	100	SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	UR0240A-261	154	21.4		7.55	100	SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	UR0310A-161	226	23.5		8.27	100	SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	UY0140A-161	95	24.9		11.1	100	SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	UY0140A-261	95	24.9		10.19	100	SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	UY0190A-161	140	21.6		8.3	100	SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	UY0190A-261	140	21.6		7.87	100	SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	UY0240A-161	160	21.5		8.7	100	SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	UY0240A-261	160	21.5		7.2	100	SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	UY0310A-161	235	23.5		8.27	100	SC-A
MANITOWOC FSG OPERATIONS, LLC	MANITOWOC	Cubes Type Ice Maker	UY0310A-261	235	23.5		7.78	100	SC-A

SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	CU0515GA- 1A	66	37		13.5	100	SC-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	CU0715MA- 1#	58	30		11	100	SC-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	CU0920MA- 1#	80	35		10	100	SC-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	CU1526MA- 1#	110	18		11.5	100	SC-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	CU1526SA- 1#	110	18		11.5	100	SC-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	CU2026MA- 1#	155	18		9.7	100	SC-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	CU2026MA- 32#	155	18		9.7	100	SC-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	CU2026SA- 1#	155	18		9.7	100	SC-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	CU3030MA- 1#	217	18		8.5	100	SC-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	CU3030MA- 32#	217	18		8.5	100	SC-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	CU3030SA- 1#	217	18		8.5	100	SC-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	CU50GA-1#	50	34		14.4	100	SC-A
SCOTSMAN ICE SYSTEMS	SCOTSMAN	Cubes Type Ice Maker	CU50PA-1#	50	34		14.4	100	SC-A

References and Data Sources

Information reviewed included information from the Food Technology Center, California Urban Water Conservation Council, Alliance for Water Efficiency, EPA Energy Star Program, EPA WaterSense program, the Department of Energy and manufacture web sites. Specific used in the report includes the:

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2. US Department of Energy – Energy Information Administration electric power rate information (<http://www.eia.gov/electricity/data.cfm#sales>);
3. Air Conditioning, Heating and Refrigeration Institute (AHRI)
(http://www.ahrinet.org/automatic+commercial+ice_makers+and+ice_storage+bins.aspx);
4. Black & Veatch - 50 LARGEST CITIES WATER/WASTEWATE RATE SURVEY
(<http://bv.com/docs/management-consulting-brochures/50-largest-cities-brochure-water-wastewater-rate-survey>); and
5. Dr. Janice Beecher - TRENDS IN CONSUMER PRICES (CPI) FOR UTILITIES THROUGH 2013
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