



Automatic Commercial Ice-Makers Summary Sheet

Automatic commercial ice-makers produce ice cubes, ice flakes, ice chips and other ice small ice products. They are dual system units that contain a water supply system and a refrigeration system. Ice-makers will also have a storage bin, insulation and a condenser, all of which can either be integrated into one system or exist as separate units (i.e., remote condensing units). The majority of ice-makers use integrated air-cooled condensers; other condenser styles include remote air-cooled and integral water-cooled systems. Standards only apply to ice makers with a harvest rate between 50 lbs. /24 hours and 2500 lbs. /24 hours.

California, Oregon, New York, Rhode Island, and Washington all have maximum energy use and condenser water use requirements per unit of ice produced (i.e., harvest use) for automatic commercial ice makers.

Excerpts from each state's standards are shown below; text in italics is directly excerpted from the state regulations.

The Multi-State Collaborative is providing these standard summaries as a courtesy; these materials are not intended to interpret state regulations. The user is responsible for reading and interpreting the regulations.

Which states have a standard?

Of the states participating in the Multi-State Appliance Collaborative, the following have a standard for automatic commercial ice makers; the date in parentheses shows the effective date of the standard:

- California (2008)
- Oregon (2010)
- New York (2010)
- Rhode Island (2006)
- Washington (2009)

California

Definitions

California Title 20 Section 1602(b)

Also see section 1602 (a) for general definitions.

“Automatic commercial ice-maker” means a factory-made assembly that is shipped in one or more packages that consists of a condensing unit and ice-making section operating as an integrated unit, that makes and harvests ice, and that may store or dispense ice.

“Cube ice” means ice manufactured in small cubes or regular pieces.

“Flake ice” means ice produced by freezing a thin layer of water on a refrigerated cylinder and removing by a scraper.

Excluded from the California Standard

Section 1601 (a) (4)

Automatic commercial ice makers with a harvest rate less than 50 lbs. /24 hours and Automatic commercial ice makers with a harvest rate greater than 2500 lbs. /24 hours.

Standard

California Title 20 Section 1605.3 (a) (8)

Energy Efficiency Standards for Automatic Commercial Ice-Makers. *The daily energy use and the daily condenser water use of automatic commercial ice-makers manufactured on or after January 1, 2008, shall be no greater than the applicable values shown in Table A-8.*

Table A-8. Standards for Automatic Commercial Ice-Makers
(Part of Table A-8 in Title 20)

Equipment Type	Type of Cooling	Harvest Rate (lbs ice/24 hrs)	Maximum Energy Use (kWh/100 lbs. Ice)	Maximum Condenser Water Use (gallons-100 lbs. ice)
Ice-Making Head	Water	<500	7.80 - .0055H	200 - .022H
		>500 and <1436	5.58 - .0011H	200 – 0.22H
		>1436	4.0	200 – 0.22H
Ice-Making Head	Air	<450	10.26 - .0086H	Not Applicable
		>450	6.89 - .0011H	Not Applicable
Remote-Condensing (but not remote compressor)	Air	<1000	8.85 - .0038H	Not Applicable
		>1000	5.10	Not Applicable
Remote-Condensing and Remote Compressor	Air	<934	8.85 - .0038H	Not Applicable
		>934	5.3	Not Applicable
Self-Contained	Water	<200	11.40 - .0190H	191 - .0315H
		>200	7.60	191 – 0.315H
Self-Contained	Air	<175	18.0 – 0.469H	Not Applicable
		>175	9.80	Not Applicable

H = Harvest rate in pounds per 24 hours, which shall be reported within 5% of the tested value.
Water use is for the condenser only and does not include potable water used to make ice.

Test Method

California Title 20 Section 1604

Air-Conditioning and Refrigeration Institute (ARI) 810-2003

Labeling Requirements

California Title 20 Section 1607

All units must comply with section 1607, Marking of Appliances, which requires the following:

(a) Every unit of every appliance within the scope of Section 1601 shall comply with the applicable provisions of this Section. The effective dates of this section shall be the same as the effective dates shown in Section 1605.1, 1605.2 or 1605.3 for appliances for which there is an energy efficiency, energy consumption, energy design, water efficiency, water consumption, or water design standard in Section 1605.1, 1605.2, or 1605.3. For appliances with no energy efficiency, energy consumption, energy design, water efficiency, water consumption, or water design standard in Section 1605.1, 1605.2, or 1605.3, the effective date of this section shall be January 1, 2006.

(b) Name, Model Number, and Date.

Except as provided in Subsection (c), the following information shall be permanently, legibly, and conspicuously displayed on an accessible place on each unit:

(1) manufacturer's name or brand name or trademark (which shall be either the name, brand, or trademark of the listed manufacturer specified pursuant to Section 1606(a)(2)(A) or, if applicable, the designated manufacturer specified pursuant to Section 1606(f)(1)(F));

(2) model number; and

(3) date of manufacture, indicating (i) year and (ii) month or smaller (e.g. week) increment. If the date is in a code that is not readily understandable to the layperson, the manufacturer shall immediately, on request, provide the code to the Energy Commission.

Subsection (c) provides exceptions to subsection (b) requirements shown above. Commercial ice makers are not called out as exceptions.

Oregon

Effective September 1, 2010

Definitions

Section 1 (a)

“Automatic commercial ice cube machine” means a factory-made assembly, not necessarily shipped in one package, consisting of a condensing unit and ice-making section operating as an integrated unit with means for making and harvesting ice cubes, and any integrated components for storing or dispensing ice.

Standard

Section 2 (1) (a)

Automatic commercial ice cube machines must have daily energy use and daily water use no greater than the applicable values in the following table:

Equipment Type	Type of Cooling	Harvest Rate (lbs ice/24 hrs)	Maximum Energy Use (kWh/100 lbs. Ice)	Maximum Condenser Water Use (gallons-100 lbs. ice)
Ice-Making Head	Water	<500	7.80 - .0055H	200 - .022H
		>500 and <1436	5.58 - .0011H	200 – 0.22H
		>1436	4.0	200 – 0.22H
Ice-Making Head	Air	<450	10.26 - .0086H	Not Applicable
		>450	6.89 - .0011H	Not Applicable
Remote-Condensing (but not remote compressor)	Air	<1000	8.85 - .0038H	Not Applicable
		>1000	5.10	Not Applicable
Remote-Condensing and Remote Compressor	Air	<934	8.85 - .0038H	Not Applicable
		>934	5.3	Not Applicable
Self-Contained	Water	<200	11.40 - .0190H	191 - .0315H
		>200	7.60	191 – 0.315H
Self-Contained	Air	<175	18.0 – 0.469H	Not Applicable
		>175	9.80	Not Applicable

H = Harvest rate in pounds per 24 hours, which shall be reported within 5% of the tested value.
Water use is for the condenser only and does not include potable water used to make ice.

Test Method

ORS 469.233 Section 2 (b)

For purposes of this subsection, automatic commercial ice cube machines shall be tested in accordance with the ARI 810-2003 test method as published by the Air-Conditioning and Refrigeration Institute. Ice-making heads include all automatic commercial ice cube machines that are not split system ice makers or self-contained models as defined in ARI 810-2003.

New York

Effective January 1, 2010

Definitions

"Automatic commercial ice-cube maker" means a factory-made assembly, not necessarily shipped in one package, consisting of a condensing unit and ice-making section operating as an integrated unit, with means for making and harvesting cube-type ice. It may also include means for storing or dispensing cube-type ice, or both.

Standard

Automatic commercial ice-cube maker.

Each automatic commercial ice-cube maker, that produces cube-type ice with capacities between fifty and two thousand five hundred pounds per twenty-four hour period sold, offered for sale or installed in New York state on or after January first, two thousand ten, when tested according to the test standard specified in air-conditioning and refrigeration institute standard 810-2003, as in effect on January first, two thousand five, shall meet the following standard levels:

(A) H means the harvest rate in pounds per twenty-four hours. For water-cooled equipment, water use is for the condenser only and does not include potable water used to make ice.

(B) For ice making head water-cooled equipment the maximum condenser water use in gal/one hundred pounds of ice shall be $200-0.022H$ and the maximum energy use with a harvest rate of:

(I) < 500 shall be $7.8-0.0055H$;

(II) 500 and $< 1,436$ shall be $5.58-0.0044H$

(III) $1,436$ and $< 2,500$ shall be 4.0

(C) For ice making head air-cooled equipment the maximum energy use with a harvest rate of:

(I) < 450 shall be $10.26-0.0086H$;

(II) 450 and $< 2,500$ shall be $6.89-0.0011H$

(D) For remote condensing but not remote compressor air-cooled equipment the maximum energy use with a harvest rate of:

(I) $< 1,000$ shall be $8.85 - 0.0038H$;

(II) $1,000$ and $< 2,500$ shall be 5.10

(E) For remote condensing and remote compressor air-cooled equipment the maximum energy use with a harvest rate of:

(I) < 934 lbs shall be $8.85 - 0.0038H$;

(II) 934 and $< 2,500$ shall be 5.3

(F) For self-contained water-cooled equipment the maximum condenser water use in gal/100 lbs of ice shall be $191 - 0.0315H$ and the maximum energy use with a harvest rate of:

(I) < 200 shall be $11.4 - 0.019H$;

(II) 200 and $< 2,500$ shall be 7.6

(G) For self-contained air-cooled equipment the maximum energy use with a harvest rate of:

(I) < 175 shall be $18.0 - 0.0469H$

(II) 175 and $< 2,500$ shall be 9.8

Rhode Island

Effective June 1, 2006

Definitions

Energy and Consumer Savings Act of 2006

Section 1(a)

"Automatic commercial ice-maker" means a factory-made assembly that is shipped in one or more packages that consists of a condensing unit and ice-making section operating as an integrated unit, that makes and harvests ice cubes, and that may store and dispense ice. This term includes machines with capacities between and including fifty (50) and two thousand five hundred (2,500) pounds per twenty-four (24) hours.

Standard

Energy and Consumer Savings Act of 2006

Section 39-27-5 (1)

Automatic commercial ice makers shall meet the energy efficiency requirements shown in Table A-7 of section 1605.3 of the California Code of Regulations, Title 20: Division 2, Chapter 4, Article 4: Appliance Efficiency Regulations as adopted on December 15, 2004.

Please see the California section above for Table A-7.

Washington

Effective January 1, 2009

Definitions

Senate Bill 6840 Section 1 (1)

"Automatic commercial ice cube machine" means a factory-made assembly, not necessarily shipped in one package, consisting of a condensing unit and ice-making section operating as an integrated unit with means for making and harvesting ice cubes. It may also include integrated components for storing or dispensing ice, or both.

Standard

Senate Bill 6840 Section 3 (1)(a)

Automatic commercial ice cube machines must have daily energy use and daily water use no greater than the applicable values in the following table:

Equipment Type	Type of Cooling	Harvest Rate (lbs ice/24 hrs)	Maximum Energy Use (kWh/100 lbs. Ice)	Maximum Condenser Water Use (gallons-100 lbs. ice)
Ice-Making Head	Water	<500	7.80 - .0055H	200 - .022H

		>500 and <1436	5.58 - .0011H	200 – 0.22H
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		>934	5.3	Not Applicable
Self-Contained	Water	<200	11.40 - .0190H	191 - .0315H
		>200	7.60	191 – 0.315H
Self-Contained	Air	<175	18.0 – 0.469H	Not Applicable
		>175	9.80	Not Applicable
H = Harvest rate in pounds per 24 hours, which shall be reported within 5% of the tested value. Water use is for the condenser only and does not include potable water used to make ice.				

(b) For purposes of this section, automatic commercial ice cube machines shall be tested in accordance with ARI 810-2003 test method as published by the air-conditioning and refrigeration institute. Ice-making heads include all automatic commercial ice cube machines that are not split system ice makers or self-contained models as defined in ARI 810-2003.