



ENERGY STAR® Program Requirements Product Specification for Water Coolers

Eligibility Criteria Draft 1 Version 3.0

1 Following is the Draft 1 Version 3.0 product specification for ENERGY STAR certified water coolers. A
2 product shall meet all of the identified criteria if it is to earn the ENERGY STAR.

3 **1) Definitions:** Below are the definitions of the relevant terms in this document.

4 A. Water Cooler: A freestanding device that consumes energy to cool and/or heat potable water.
5 Products that have dispensing functions such as sparkling, alkaline, or flavored water, in addition
6 to cold and hot water will also be recognized by the classification below.

7 a. Cold Only Units: Units that dispense cold water only.

8 b. Cook and Cold Units: Units that dispense both cold and room-temperature water.

9 c. Hot and Cold Units: Units that dispense both hot and cold water.

10 d. Hot, Cook, and Cold Units: Units that dispense hot, cold, and room-temperature water.

11 **Note:** EPA has added the category “Hot, Cook, and Cold Units” above to provide further clarity for units that
12 also dispense room temperature water. These units were previously recognized as Hot and Cold Units and
13 will continue to meet the same efficiency criteria and testing requirements as this category. EPA believes
14 this update in the specification and QPL will provide additional information to consumers, and requests
15 feedback from stakeholders if there is need for further clarification.

16 B. Water Source:

17 a. Bottle: A bottle or reservoir supplies water to the water cooler.

18 b. Point of Use (POU): The water cooler is connected to a pressurized water source.

19 c. Conversion-type Water Cooler: A unit that ships as either Bottle-source or POU and includes a
20 conversion kit intended to convert the Water Cooler from a Bottle-source unit to a POU unit or
21 to convert a POU unit to a Bottle-source unit.

22 **Note:** The water source language above has been adjusted from “bottle-type” to “bottle” to reduce confusion
23 around type categories.

24 C. Water Conditioning:

25 a. Conditioned Storage: Hot and cold thermally conditioned water is stored in tanks located within
26 the body of the water cooler. The conditioned water is available instantaneously.

27 b. On Demand Heating: The unit heats water as it is requested (i.e., without a hot water storage
28 tank), which typically takes a few minutes to deliver. On demand units use storage tanks to
29 condition and provide cold water only.

Note: EPA clarifies the definitions in section C.a. and C.b. as referring to the method of conditioning that the unit uses to provide hot and cold water. Units that have reservoirs of hot water are classified as “Conditioned Storage” type and must meet the energy efficiency requirements for that category. These units run heating and cooling cycles during the No Water Draw test to maintain the setpoint temperatures of those reservoirs. Units that do not maintain a hot water reservoir, and instead only heat water when there is a request for it, are classified as “On Demand Heating” type. These units must meet the efficiency requirement for that category. It is important to note that this On Demand categorization is dependent on the handling of hot water only – EPA’s understanding is that all products recognized by this specification use storage reservoirs to provide cold water and encourages stakeholders to comment if there are any units on the market that provide “On Demand” cooling. EPA appreciates feedback on these definitions and if further clarification is needed.

EPA has also removed the definition for “Compartment-type Water Cooler”, as there does not seem to be a significant number of units on the market that meet the intent of this definition, which is to include units with a refrigerated storage compartment, with or without the provisions for making ice. Furthermore, incorrect use of the identifier in the reported unit shipment data and on the Qualified Products List (QPL) may cause confusion for consumers. Water coolers that have dry, insulated compartments that do not have active or dedicated conditioning may still be certified but will not be recognized under a separate category, as this feature should not require any additional energy, though availability of this feature may be listed along with other product features. Given the lack of product availability, and to provide clarity in the specification, the compartment type water cooler definition is deleted from the product specification.

D. Product Family: A group of product models that (1) are manufactured by the same manufacturer, (2) use the same primary energy source, and (3) have electrical characteristics that are essentially identical, and which do not have any differing physical or functional characteristics that affect energy consumption.

E. Test Modes:

a. On Mode with No Water Draw: A test that records the 24-hour energy consumption of a water cooler with no water drawn during the test period. This test is also known as “Standby”.

b. On Mode with Water Draw: A test that records the energy delivered in a water draw and the subsequent energy consumed while recovering from that water draw.

- Section 6.2. On Mode with Water Draw – All Unit Types Test cold water draw in Conditioned Storage units and On Demand units, and test hot water draw in Conditioned Storage units,

- Section 6.3. On Mode with Water Draw – On Demand Units Only Test hot water draw in On Demand units.

- Section 7.6. On Mode Water Draw Performance (OMP): A metric for water draw performance that compares the energy delivered and energy consumed by the water cooler.

Note: EPA clarifies references to the existing [ENERGY STAR Water Cooler Test Method](#) and defines the tests that are applicable to each product type. EPA is not proposing revisions to the Water Cooler Test Method at this time. Instead, EPA is expanding the use of the existing test method to include on mode with water draw as a reporting requirement.

2) Scope:

A. Included Products: Products that meet the definition of a water cooler as specified herein are eligible for ENERGY STAR certification, with the exception of products listed in Section 2.B. Products with additional dispensing features including sparkling, alkaline, or flavored water, are

75 also included in the scope of this specification.

76 B. Excluded Products: Units that provide pressurized water and are not free standing (i.e., wall
77 mounted, under sink, or otherwise building integrated) are not eligible for ENERGY STAR. Air-
78 source units and other units with a water source other than bottled or tap water (POU) are not
79 eligible. Units with provisions for making, storing and dispensing small amount of ice and units that
80 are primarily ice makers that have a water dispensing function, or that meet the definition of an
81 Automatic Commercial Ice Maker (ACIM) as defined by the ENERGY STAR Product Specification
82 for that category, are not eligible for the water cooler product category.

83 **Note:** EPA clarifies the scope above to explicitly include water coolers that offer additional features to
84 consumers, while providing at least cold water, in order to meet the basic definition. Products that offer
85 sparkling, alkaline, or flavored water are also included within the scope of this specification. Watercoolers
86 that have provisions for making, storing, and dispensing small amounts of ice are not eligible to meet this
87 specification. ACIMs that offer water dispensing are not eligible. EPA requests comment on including the
88 outlined additional features and any other features for consideration in this specification.

89 For example, EPA received requests to include large, commercial food service grade sparkling water
90 fountains. However, inclusion of these large, sophisticated units would require amendments or additions to
91 the test method and criteria that go beyond the intended scope of this specification at this time. EPA will
92 consider adding a new category to this specification in the future if there is meaningful consumer savings,
93 evident differentiation in the market, and industry interest in expanding the scope of this specification.

94 **3) Certification Criteria:**

95 A. Energy Efficiency Requirements:

96 **Table 1: Energy-Efficiency Criteria for Certified Water Coolers**

Product Type	Conditioning Method	On Mode with No Water Draw (kWh/day)	OMP for Cold Water Draw	OMP for Hot Water Draw
Cold Only & Cook and Cold units	Conditioned Storage	≤ 0.16	Reported	N/A
Hot and Cold & Hot, Cook, and Cold Units	Conditioned Storage	≤ 0.70	Reported	Reported
Hot and Cold & Hot, Cook, and Cold Units	On Demand Heating	≤ 0.18	Reported	Reported

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98 **Note:** The On Mode with No Water Draw level has been revised for Hot and Cold & Hot, Cook, and Cold
99 Conditioned Storage type units. As these units make up the majority of the products sold and use the most
100 energy during periods of no water draw, this category has the largest opportunity for additional energy
101 savings. The proposed level represents a 19.5% reduction in standby energy from the current specification,
102 and approximately 34% of the current ENERGY STAR certified products would qualify. Estimated annual
103 unit savings are 183 kWh and \$21 in operational cost, with potential national annual savings of 4.6 MWh
104 and nearly \$450 million. EPA based proposed levels on a dataset comprised of 220 conditioned storage hot
105 and cold models, all listed with ENERGY STAR. Since no additional comparable datasets are available,
106 EPA assumes models not on the ENERGY STAR QPL perform worse than the ENERGY STAR levels, thus
107 EPA's proposed level for conditioned storage is slightly more inclusive than typical for an ENERGY STAR
108 specification revision.

109 Given the limited number of Conditioned Storage Cold Only & Cook and Cold units as well as On Demand
110 Heating Hot and Cold & Hot, Cook, and Cold units currently qualified as ENERGY STAR, EPA is not to
111 revise the On Mode with No Water Draw levels for these product categories at this time. Rather, EPA is
112 interested in expanding certification of these product types to deliver additional savings.

113 EPA introduces two reporting requirements to help inform consumers about their purchase decisions: 1) the
114 OMP of the unit for cold water draw; and, 2) the OMP for hot water draw.

115 While units spend the most time in standby mode, the OMP values obtained for both hot and cold water
116 draw can help identify products and technologies that condition water more or less efficiently. By providing
117 information on the energy used for drawing water, consumers can make a more informed buying decision
118 based on their usage. In residential or low-volume office settings, standby power will be the most important
119 metric to understand. However, in a commercial or high-volume setting, where the unit will be drawing and
120 replenishing hot and cold water many times a day, comparing the energy use from the water draw test can
121 help consumers select the product that best meets their needs. The test procedure and calculation are
122 unamended from the 2013 revision to the ENERGY STAR Water Cooler Test Method, although changes to
123 the terms used in the test method will be made to align with the final version of this specification.

124 EPA has not proposed any allowances at this time for units with additional features such as sparkling or
125 flavored water, as the responses to the Discussion Guide and stakeholder feedback indicate that these
126 features do not require additional energy. Further data supporting the need for an allowance and water draw
127 testing would provide insights on any impact of these additional features to energy performance.

128 B. Significant Digits and Rounding:

129 a. All calculations shall be carried out with actual measured or observed values. Only the final
130 result of a calculation shall be rounded. Calculated results shall be rounded to the nearest
131 significant digit as expressed in the corresponding specification limit.

132 b. Unless otherwise specified, compliance with specification limits shall be evaluated using
133 exact values without any benefit from rounding.

134 C. Additional Reporting Requirements:

135 a. Report the type of refrigerant used in the respective water cooler unit, for example: R-410A,
136 R-134a, R-290, etc.

137 b. Report the refrigerant charge of the respective water cooler unit, in ounces.

138 **Note:** In response to the Discussion Guide, some stakeholders indicated product offerings with low-global
139 warming potential (low-GWP) refrigerants. Further, some stakeholders have expressed an interest in
140 knowing which ENERGY STAR products use such refrigerants. As such, EPA proposes to require reporting
141 of the charge and type of refrigerant used in the product through a partner's certification body at the time of
142 certification. EPA plans to make this information available in the searchable ENERGY STAR Product
143 Finder.

144 **4) Test Requirements:**

145 A. A representative model shall be selected for testing per the following requirements:

146 a. For certification of an individual product model, the representative model shall be
147 equivalent to that which is intended to be marketed and labeled as ENERGY STAR.

148 b. For certification of a product family, any model within that product family can be tested and
149 serve as the representative model.

150 B. When testing water coolers, the following test method shall be used to determine ENERGY STAR

151 certification.

152 **Table 2: Test Method for ENERGY STAR Certification**

ENERGY STAR Requirement	Conditioning Method	Test Method Reference
On Mode with No Water Draw	Conditioned Storage and On Demand	ENERGY STAR Test Method for Water Coolers (Rev. May-2013), Sections 6.1 and 7.1
OMP for Cold Water Draw*	Conditioned Storage and On Demand	ENERGY STAR Test Method for Water Coolers (Rev. May-2013), Sections 6.2 and 7.6
OMP for Hot Water Draw*	Conditioned Storage	ENERGY STAR Test Method for Water Coolers (Rev. May-2013), Sections 6.2 and 7.6
	On Demand	ENERGY STAR Test Method for Water Coolers (Rev. May-2013), Sections 6.3 and 7.6

153 * Note: OMP for Cold Water Draw and OMP for Hot Water Draw are required for reporting only.

154 **Note:** As stated in this draft, EPA is introducing a reporting requirement for OMP for cold water draw and
155 OMP for hot water draw. The test method reference is unchanged pending finalization of the proposed
156 definitional and clarifying changes in Section 1 of the specification. Additional sections are referenced in
157 Table 2 to include water draw testing and the calculation of OMP. The inclusion of these sections in Table 2
158 highlights for clarification the energy consumption and metrics calculations portions of the test procedure,
159 which includes other necessary sections for equipment testing.

160 **5) Effective Date:** This ENERGY STAR Water Cooler Specification shall take effect on a date that is
161 **TBD.** To qualify for ENERGY STAR, a product model shall meet the ENERGY STAR specification in
162 effect on the model's date of manufacture. The date of manufacture is specific to each unit and is the
163 date on which a unit is considered to be completely assembled.

164 **6) Future Specification Revisions:** EPA reserves the right to change the specification should
165 technological and/or market changes affect its usefulness to consumers, industry, or the environment.
166 In keeping with current policy, revisions to the specification are arrived at through industry discussions.
167 In the event of a specification revision, please note that the ENERGY STAR certification is not
168 automatically granted for the life of a product model.