



ENERGY STAR® Program Requirements for Dehumidifiers

Partner Commitments

Following are the terms of the ENERGY STAR Partnership Agreement as it pertains to the manufacture and labeling of ENERGY STAR qualified products. The ENERGY STAR Partner must adhere to the following partner commitments:

Qualifying Products

1. Comply with current ENERGY STAR Eligibility Criteria, which define performance requirements and test procedures for dehumidifiers. A list of eligible products and their corresponding Eligibility Criteria can be found at www.energystar.gov/specifications.
2. **Prior to associating the ENERGY STAR name or mark with any product**, obtain written certification of ENERGY STAR qualification from a Certification Body recognized by EPA for dehumidifiers. As part of this certification process, products must be tested in a laboratory recognized by EPA to perform dehumidifier testing. A list of EPA-recognized laboratories and Certification Bodies can be found at www.energystar.gov/testingandverification.

Using the ENERGY STAR Name and Marks

3. Comply with current ENERGY STAR Identity Guidelines, which define how the ENERGY STAR name and marks may be used. Partner is responsible for adhering to these guidelines and ensuring that its authorized representatives, such as advertising agencies, dealers, and distributors, are also in compliance. The ENERGY STAR Identity Guidelines are available at www.energystar.gov/logouse.
4. Use the ENERGY STAR name and marks only in association with qualified products. Partner may not refer to itself as an ENERGY STAR Partner unless at least one product is qualified and offered for sale in the U.S. and/or ENERGY STAR partner countries.
5. Provide clear and consistent labeling of ENERGY STAR qualified dehumidifiers.
 - 5.1. The ENERGY STAR mark must be clearly displayed on the top/front of the product, in product literature (i.e., user manuals, spec sheets, etc.), on the product packaging, and on the manufacturer's Internet site where information about ENERGY STAR qualified models is displayed.

Verifying Ongoing Product Qualification

6. Participate in third-party verification testing through a Certification Body recognized by EPA for dehumidifiers, providing full cooperation and timely responses. EPA/DOE may also, at its discretion, conduct tests on products that are referred to as ENERGY STAR qualified. These products may be obtained on the open market, or voluntarily supplied by Partner at the government's request.

Providing Information to EPA

7. Provide unit shipment data or other market indicators to EPA annually to assist with creation of ENERGY STAR market penetration estimates, as follows:
 - 7.1. Partner must submit the total number of ENERGY STAR qualified dehumidifiers shipped in the calendar year or an equivalent measurement as agreed to in advance by EPA and Partner.

Partner shall exclude shipments to organizations that rebrand and resell the shipments (unaffiliated private labelers).

- 7.2. Partner must provide unit shipment data segmented by meaningful product characteristics (e.g., type, capacity, presence of additional functions) as prescribed by EPA.
- 7.3. Partner must submit unit shipment data for each calendar year to EPA or an EPA-authorized third party, preferably in electronic format, no later than March 1 of the following year.

Submitted unit shipment data will be used by EPA only for program evaluation purposes and will be closely controlled. If requested under the Freedom of Information Act (FOIA), EPA will argue that the data is exempt. Any information used will be masked by EPA so as to protect the confidentiality of the Partner.

8. Report to EPA any attempts by recognized laboratories or Certification Bodies (CBs) to influence testing or certification results or to engage in discriminatory practices.
9. Notify EPA of a change in the designated responsible party or contacts within 30 days using the My ENERGY STAR Account tool (MESA) available at www.energystar.gov/mesa.

Performance for Special Distinction

In order to receive additional recognition and/or support from EPA for its efforts within the Partnership, the ENERGY STAR Partner may consider the following voluntary measures, and should keep EPA informed on the progress of these efforts:

- Provide quarterly, written updates to EPA as to the efforts undertaken by Partner to increase availability of ENERGY STAR qualified products, and to promote awareness of ENERGY STAR and its message.
- Consider energy efficiency improvements in company facilities and pursue benchmarking buildings through the ENERGY STAR Buildings program.
- Purchase ENERGY STAR qualified products. Revise the company purchasing or procurement specifications to include ENERGY STAR. Provide procurement officials' contact information to EPA for periodic updates and coordination. Circulate general ENERGY STAR qualified product information to employees for use when purchasing products for their homes.
- Feature the ENERGY STAR mark(s) on Partner website and other promotional materials. If information concerning ENERGY STAR is provided on the Partner website as specified by the ENERGY STAR Web Linking Policy (available in the Partner Resources section of the ENERGY STAR website), EPA may provide links where appropriate to the Partner website.
- Ensure the power management feature is enabled on all ENERGY STAR qualified displays and computers in use in company facilities, particularly upon installation and after service is performed.
- Provide general information about the ENERGY STAR program to employees whose jobs are relevant to the development, marketing, sales, and service of current ENERGY STAR qualified products.
- Provide a simple plan to EPA outlining specific measures Partner plans to undertake beyond the program requirements listed above. By doing so, EPA may be able to coordinate, and communicate Partner's activities, provide an EPA representative, or include news about the event in the ENERGY STAR newsletter, on the ENERGY STAR website, etc. The plan may be as simple as providing a list of planned activities or milestones of which Partner would like EPA to be aware. For example, activities may include: (1) increasing the availability of ENERGY STAR qualified products by converting the entire product line within two years to meet ENERGY STAR guidelines; (2) demonstrating the economic and environmental benefits of energy efficiency through special in-store displays twice a year; (3) providing information to users (via the website and user's manual) about energy-saving features and operating characteristics of ENERGY STAR qualified products; and (4) building awareness of the ENERGY STAR Partnership and brand identity by collaborating with EPA on one print advertorial and one live press event.
- Join EPA's SmartWay Transport Partnership to improve the environmental performance of the company's shipping operations. The SmartWay Transport Partnership works with freight carriers,



ENERGY STAR® Program Requirements Product Specification for Dehumidifiers

Eligibility Criteria Version 5.0

Following is the Version 5.0 product specification for ENERGY STAR certified dehumidifiers. A product shall meet all of the identified criteria if it is to earn the ENERGY STAR.

1) **Definitions:** Below are the definitions of the relevant terms in this document. Where noted below, definitions are identical to the definitions in the U.S Department of Energy (DOE) test procedure at 10 Code of Federal Regulations (CFR) 430, Subpart B, Appendix X1 or in 10 CFR 430.2. The definitions from the CFR have been reprinted for ease of use; however, the CFR definitions take precedence and may be modified by DOE.

A. **Dehumidifier:** A product, other than a portable air conditioner, room air conditioner, or packaged terminal air conditioner, that is a self-contained, electrically operated, and mechanically encased assembly consisting of: (a) a refrigerated surface (evaporator) that condenses moisture from the atmosphere; (b) a refrigerating system, including an electric motor; (c) an air-circulating fan; and (d) means for collecting or disposing of the condensate.

a. **Portable Dehumidifier:** A dehumidifier designed to operate within the dehumidified space without the attachment of additional ducting, although means may be provided for optional duct attachment.

b. **Whole-home Dehumidifier:** A dehumidifier designed to be installed with ducting to deliver return process air to its inlet and to supply dehumidified process air from its outlet to one or more locations in the dehumidified space.

B. **Product Capacity:** A measure of the ability of a dehumidifier to remove moisture from its surrounding atmosphere, measured in pints collected per 24 hours of operation under the specified ambient conditions. Product Capacity shall be measured according to the test standard referenced in Section 4, below.

C. **Product Case Volume:** For whole-home dehumidifiers, this is a measure of the rectangular volume that the product case occupies, exclusive of any duct attachment collars or other external components.

D. **Integrated Energy Factor (IEF):** A measure of energy efficiency of a dehumidifier calculated by dividing the corrected product capacity with unit and test time adjustments by the summation of the energy consumed during the 6-hour dehumidification mode test and the annual low-power mode with an applied conversion factor, expressed in liters per kilowatt hour (L/kWh). IEF shall be calculated according to the test standard referenced in Section 4, below.

E. **Basic Model:** All units of a given type of product (or class thereof) manufactured by one manufacturer, having the same primary energy source, and which have essentially identical electrical, physical, and functional (or hydraulic) characteristics that affect energy consumption, energy efficiency, water consumption, or water efficiency.

2) **Scope:**

A. **Included Products:** Products that meet the definition of a dehumidifier as specified herein are eligible for ENERGY STAR qualification, with the exception of products listed in Section 2B.

- B. Excluded Products: Dehumidifiers with product capacities greater than 155 U.S. pints/day (73.34 liters/day) are not eligible for ENERGY STAR.

3) Certification Criteria:

- A. Energy Efficiency Requirements: To qualify for ENERGY STAR, dehumidifiers shall meet the IEF requirements provided in Table 1 and Table 2, below.

Table 1: Performance Criteria for ENERGY STAR Certified Portable Dehumidifiers

Product Capacity (Pints/Day)	Integrated Energy Factor Under Test Conditions (L/kWh)
≤ 25.00	≥ 1.57
25.01 to 50.00	≥ 1.80
≥ 50.01	≥ 3.30

Table 2: Performance Criteria for ENERGY STAR Certified Whole-home Dehumidifiers

Product Case Volume (ft ³)	Integrated Energy Factor Under Test Conditions (L/kWh)
≤ 8.0	≥ 2.09
> 8.0	≥ 3.30

Note: Dehumidifiers with the ability to operate as both a portable and whole-home dehumidifier, by means of installation or removal of an optional ducting kit, shall meet requirements under both configurations to be certified.

- B. Other Requirements:

Qualifying units shall be equipped with an adjustable humidistat control or shall require a remote humidistat control to operate.

4) Test Requirements:

- A. One of the following sampling plans shall be used to test energy performance for certification to ENERGY STAR:
- a. A single unit is selected, obtained, and tested. The measured performance of this unit and of each subsequent unit manufactured must be equal to or better than the ENERGY STAR specification requirements. Note that to determine the represented value per 10 CFR 429.36, additional testing outside of ENERGY STAR is required. The represented value must also be equal to or better than the ENERGY STAR specification requirements; or
 - b. At least two units are selected, obtained and tested. The represented value is calculated from the test results according to the sampling requirements defined in 10 CFR 429.36. The represented value must be equal to or better than the ENERGY STAR specification requirements.

Results of the tested unit(s) may be used to certify additional individual model variations within a Basic Model as long as the definition for Basic Model provided in Section 1, above, and in 10 CFR 430.2 is met.

- B. When testing dehumidifiers, the following test methods shall be used to determine ENERGY STAR certification:

Table 3: Test Methods for ENERGY STAR Certification

ENERGY STAR Requirement	Test Method Reference
Product Capacity, Product Case Volume, and Integrated Energy Factor (IEF)	10 CFR 430, Subpart B, Appendix X1 OR DOE-approved test procedure waiver pursuant to 10 CFR 430.27

- C. Represented Value: The represented value is the identical value certified to DOE, listed on the ENERGY STAR QPL, and shown on consumer facing materials.
- D. For the purpose of ENERGY STAR certification, the performance of efficient variable speed dehumidifiers shall require a test procedure waiver from DOE per 10 CFR 430.27.
- E. Significant Digits and Rounding: All calculations shall be carried out as specified in 10 CFR 430, Subpart B, Appendix X1 and 10 CFR 430.23(z). Do not round individual test results. Rounding is specified in 10 CFR 429.36 for the represented value.

5) Effective Date:

The ENERGY STAR Version 5 Dehumidifier Specification shall take effect on **October 31, 2019**. To certify for ENERGY STAR, a product model shall meet the ENERGY STAR specification in effect on the date of manufacture. The date of manufacture is specific to each unit and is the date on which a unit is considered to be completely assembled.

6) Future Specification Revisions:

EPA reserves the right to change the specification should technological and/or market changes affect its usefulness to consumers, industry, or the environment. In keeping with current policy, revisions to the specification are arrived at through industry discussions. In the event of a specification revision, please note that the ENERGY STAR certification is not automatically granted for the life of a product model. EPA is interested in the following considerations for future specification revisions:

- A. Dehumidifiers are tested under steady state conditions, now including periods of off-cycle and inactive/off time. However, in real situations, dehumidifiers with humidistats typically cycle on and off. EPA continues to be interested in any data showing technologies with superior performance in these real-world conditions.
- B. EPA is aware that there are Wi-Fi dehumidifiers on the market now. EPA will continue to watch this trend and is particularly interested to see whether consumers are interested in these devices. If they gain any significant market presence, EPA anticipates including optional connected criteria in a future revision.