



Recognition Criteria Non-Ducted Split Air Conditioners and Heat Pumps

Scope

Included products: Residential single-split, multiple-split, and multi-head mini-split air conditioners and heat pumps with non-ducted indoor units, as defined below, are eligible for ENERGY STAR® Most Efficient recognition in 2021. The unit may be of a modular design that allows for combining multiple outdoor coils and compressors to create one overall system. Non-ducted systems eligible for ENERGY STAR Most Efficient are all split systems

Central air conditioner or central air conditioning heat pump¹: A product, other than a packaged terminal air conditioner or packaged terminal heat pump, which is powered by single phase electric current, air cooled, rated below 65,000 Btu per hour, not contained within the same cabinet as a furnace, the rated capacity of which is above 225,000 Btu per hour, and is a heat pump or a cooling unit only.

A central air conditioner or central air conditioning heat pump may consist of: A single-package unit; an outdoor unit and one or more indoor units; an indoor unit only; or an outdoor unit with no match. In the case of an indoor unit only or an outdoor unit with no match, the unit must be tested and rated as a system (combination of both an indoor and an outdoor unit).

Central air conditioner (CAC): A product, as defined above, that does not have a heating function.

Air-source heat pump (ASHP): A product, as defined above, that does have a heating function.

Non-ducted indoor unit¹: An indoor unit that is designed to be permanently installed, mounted on room walls and/or ceilings, and that directly heats or cools air within the conditioned space.

Single-split system²: A split system that has one outdoor unit and one indoor unit connected with a single refrigeration circuit.

Multiple-split (or multi-split) system¹: A split system that has one outdoor unit and two or more coil-only indoor units and/or blower coil indoor units connected with a single refrigerant circuit. The indoor units operate independently and can condition multiple zones in response to at least two indoor thermostats or temperature sensors. The outdoor unit operates in response to independent operation of the indoor units based on control input of multiple indoor thermostats or temperature sensors, and/or based on refrigeration circuit sensor input (e.g., suction pressure).

¹ 10 CFR Part 430, Subpart B, Appendix M - Uniform Test Method for Measuring the Energy Consumption of Central Air Conditioners and Heat Pumps.

² 10 CFR Part 430, Subpart B, Appendix M - Uniform Test Method for Measuring the Energy Consumption of Central Air Conditioners and Heat Pumps.

Multi-head mini-split system¹: A split system that has one outdoor unit and that has two or more indoor units connected with a single refrigeration circuit. The indoor units operate in unison in response to a single indoor thermostat.

Excluded products: The following products are not eligible for ENERGY STAR Most Efficient recognition in 2021 under this specification:

- Units that run on three-phase power.
- Units rated for more than 65,000 Btu/h of cooling.
- Ducted and packaged units are eligible for ENERGY STAR Most Efficient 2021 recognition with different requirements under the Central Air Conditioners, Heat Pumps, and Geothermal Heat Pumps recognition criteria.

Recognition Criteria

1) Product must be ENERGY STAR certified consistent with applicable ENERGY STAR Partner Commitments and the requirements set forth in the latest version of the ENERGY STAR Program Requirements Product Specification for Residential Air Source Heat Pump and Central Air Conditioner, Version 5.0. Product performance must be certified by a certification body recognized by the U.S. Environmental Protection Agency (EPA).

2) Products must meet the following cooling and heating performance levels: 20 SEER, 12.5 EER and (for heat pumps) 10 HSPF.

3) Products must be able to provide cooling (and heating if applicable) at two or more capacity levels.

4) Products must meet the system status and messaging requirements as specified below.

- A. **Unit setup information:** Units shall be able to send to and receive information from at least one system controller to automatically configure settings appropriate to the controlled equipment, such as airflow for heating and cooling. This may include prompting an installer through configuration of HVAC system settings and desired comfort settings, and a test sequence at turn-on. The controller may be a thermostat, mobile application, or an on-board controller designed to coordinate operation of an entire HVAC system.
- B. **Fault History:** Service personnel shall be able to access a log displaying fault history on an alphanumeric display, which may show plain text or error codes. The product may enable access through any mechanism, for example: 1) a text-based display (e.g. LED) permanently incorporated into the unit, 2) at least one thermostat available on the market, 3) a diagnostic tool available on the market which can be brought to the work site by the service personnel. Other equivalent mechanisms are also acceptable.
- C. **Resident Alerts in Plain Text:** Units shall facilitate display, in plain text, of messages to residents, without assuming that the resident knows much about their system. At a minimum, these messages shall clearly recommend a specific action for the resident to take if the air filter needs to be checked, changed, or cleaned, and if the unit needs professional service. This may be through display on the thermostat or other control device in occupied space in the home, or through any other system that can reach

residents directly (e.g., mobile application). Displays on a unit inside a closet, basement or attic, or outside of conditioned space, will not be sufficient. An LED on a remote or thermostat, with static text beside it, is acceptable.

Recognition Period

Upon review and approval of applications received from ENERGY STAR Partners, EPA will add qualifying models to the ENERGY STAR Most Efficient 2021 product list for non-ducted air conditioners and heat pumps from January 1, 2021 through December 31, 2021. The ENERGY STAR Most Efficient 2021 designation may be used in association with models recognized during this period for as long as the model remains on the market.