



Recognition Criteria Refrigerator-Freezers

Scope

Included products. Full-size refrigerator-freezers are eligible for ENERGY STAR® Most Efficient recognition in 2014.

Excluded products. The following products are not eligible for ENERGY STAR Most Efficient recognition in 2014:

- Compact models: For products certified under Version 4.1: Any refrigerator or refrigerator-freezer with total volume less than 7.75 cubic feet (220 liters rated volume as determined in Appendix A1 of 10 CFR 430 subpart B) and 36 inches (0.91 meters) or less in height. For products certified under Version 5.0: Any refrigerator or refrigerator-freezer with total volume less than 7.75 cubic feet (220 liters rated volume as determined in Appendix A of 10 CFR subpart B).
- Freezers
- All-refrigerators

Recognition Criteria

1) Product must be ENERGY STAR certified consistent with applicable ENERGY STAR Partner Commitments and the requirements set forth in the ENERGY STAR Program Requirements Product Specification for Residential Refrigerators and Freezers, Version 4.1 and, for products certified on or after September 15, 2014, Version 5.0. Product performance must be certified by an EPA-recognized certification body.

2A) For products certified to Version 4.1: Product must use less than or equal to 481 kWh per year and be at least 30% more efficient than federal requirements (Table 1 below), as determined by the ENERGY STAR specified federal test procedure.

2B) For products certified to Version 5.0: Product must meet the requirements expressed in Table 2 on the next page, as determined by the ENERGY STAR specified federal test procedure.

Product Class		Maximum Annual Energy Use (kWh/year)
1	Refrigerator and Refrigerator-Freezer with manual defrost	$AV \leq 49.8, E_{ann} \leq 6.17 \cdot AV + 173.9$
2	Refrigerator-Freezer with partial automatic defrost	$AV > 49.8, E_{ann} \leq 481$
3	Top-Mount Freezer without through-the-door ice	$AV \leq 42.0, E_{ann} \leq 6.86 \cdot AV + 193.2$ $AV > 42.0, E_{ann} \leq 481$
4	Side-Mount Freezer without through-the-door ice	$AV \leq 36.5, E_{ann} \leq 3.44 \cdot AV + 355.3$ $AV > 36.5, E_{ann} \leq 481$
5	Bottom-Mount Freezer without through-the-door ice	$AV \leq 49.6, E_{ann} \leq 3.22 \cdot AV + 321.3$ $AV > 49.6, E_{ann} \leq 481$
5a	Bottom-Mount Freezer with through-the-door ice	$AV \leq 29.6, E_{ann} \leq 3.50 \cdot AV + 377.3$ $AV > 29.6, E_{ann} \leq 481$
6	Top-Mount Freezer with through-the-door ice	$AV \leq 32.5, E_{ann} \leq 7.14 \cdot AV + 249.2$ $AV > 32.5, E_{ann} \leq 481$
7	Side-Mount Freezer with through-the-door ice	$AV \leq 27.8, E_{ann} \leq 7.07 \cdot AV + 284.2$ $AV > 27.8, E_{ann} \leq 481$

AV = Adjusted Volume in cubic feet. A refrigerator's adjusted volume is equal to its fresh volume + (1.63 x Freezer Volume). This adjustment factor assures that differences in freezer size are taken into account.

Note: Automatic defrost is assumed unless the product class name specifies another type of defrost (e.g., partial automatic or manual)

Table 2.		
Product Class		Maximum Annual Energy Use (kWh/year)
1	Refrigerator-freezers and refrigerators other than all-refrigerators with manual defrost.	$AV \leq 65.6, E_{ann} \leq 6.79*AV + 191.3$ $AV > 65.6, E_{ann} \leq 637$
2	Refrigerator-freezers—partial automatic defrost.	$AV \leq 65.6, E_{ann} \leq 6.79*AV + 191.3$ $AV > 65.6, E_{ann} \leq 637$
3	Refrigerator-freezers—automatic defrost with top-mounted freezer without an automatic icemaker.	$AV \leq 63.9, E_{ann} \leq 6.86*AV + 198.6$ $AV > 63.9, E_{ann} \leq 637$
3-BI	Built-in refrigerator-freezer—automatic defrost with top-mounted freezer without an automatic icemaker.	$AV \leq 63.9, E_{ann} \leq 6.86*AV + 198.6$ $AV > 63.9, E_{ann} \leq 637$
3I	Refrigerator-freezers—automatic defrost with top-mounted freezer with an automatic icemaker without through-the-door ice service.	$AV \leq 51.6, E_{ann} \leq 6.86*AV + 282.6$ $AV > 51.6, E_{ann} \leq 637$
3I-BI	Built-in refrigerator-freezers—automatic defrost with top-mounted freezer with an automatic icemaker without through-the-door ice service.	$AV \leq 51.6, E_{ann} \leq 6.86*AV + 282.6$ $AV > 51.6, E_{ann} \leq 637$
4	Refrigerator-freezers—automatic defrost with side-mounted freezer without an automatic icemaker.	$AV \leq 53.0, E_{ann} \leq 7.23*AV + 253.1$ $AV > 53.0, E_{ann} \leq 637$
4-BI	Built-In Refrigerator-freezers—automatic defrost with side-mounted freezer without an automatic icemaker.	$AV \leq 53.0, E_{ann} \leq 7.23*AV + 253.1$ $AV > 53.0, E_{ann} \leq 637$
4I	Refrigerator-freezers—automatic defrost with side-mounted freezer with an automatic icemaker without through-the-door ice service.	$AV \leq 41.4, E_{ann} \leq 7.23*AV + 337.1$ $AV > 41.4, E_{ann} \leq 637$
4I-BI	Built-In Refrigerator-freezers—automatic defrost with side-mounted freezer with an automatic icemaker without through-the-door ice service.	$AV \leq 41.4, E_{ann} \leq 7.23*AV + 337.1$ $AV > 41.4, E_{ann} \leq 637$
5	Refrigerator-freezers—automatic defrost with bottom-mounted freezer without an automatic icemaker.	$AV \leq 48.8, E_{ann} \leq 7.52*AV + 269.5$ $AV > 48.8, E_{ann} \leq 637$
5-BI	Built-In Refrigerator-freezers—automatic defrost with bottom-mounted freezer without an automatic icemaker.	$AV \leq 48.8, E_{ann} \leq 7.52*AV + 269.5$ $AV > 48.8, E_{ann} \leq 637$
5I	Refrigerator-freezers—automatic defrost with bottom-mounted freezer with an automatic icemaker without through-the-door ice service.	$AV \leq 37.7, E_{ann} \leq 7.52*AV + 353.5$ $AV > 37.7, E_{ann} \leq 637$
5I-BI	Built-In Refrigerator-freezers—automatic defrost with bottom-mounted freezer with an automatic icemaker without through-the-door ice service.	$AV \leq 37.7, E_{ann} \leq 7.52*AV + 353.5$ $AV > 37.7, E_{ann} \leq 637$
5A	Refrigerator-freezers—automatic defrost with bottom-mounted freezer with through-the-door ice service.	$AV \leq 28.0, E_{ann} \leq 7.86*AV + 416.7$ $AV > 28.0, E_{ann} \leq 637$
5A-BI	Built-in refrigerator-freezer—automatic defrost with bottom-mounted freezer with through-the-door ice service.	$AV \leq 28.0, E_{ann} \leq 7.86*AV + 416.7$ $AV > 28.0, E_{ann} \leq 637$
6	Refrigerator-freezers—automatic defrost with top-mounted freezer with through-the-door ice service.	$AV < 41.5, E_{ann} \leq 7.14*AV + 340.2$ $AV > 41.5, E_{ann} \leq 637$
7	Refrigerator-freezers—automatic defrost with side-mounted freezer with through-the-door ice service.	$AV \leq 35.3, E_{ann} \leq 7.26*AV + 380.5$ $AV > 35.3, E_{ann} \leq 637$
7-BI	Built-in refrigerator-freezers—automatic defrost with side-mounted freezer with through-the-door ice service.	$AV \leq 35.3, E_{ann} \leq 7.26*AV + 380.5$ $AV > 35.3, E_{ann} \leq 637$
AV = Adjusted Volume (AV) shall be calculated in accordance with the DOE test procedure in 10 CFR 430 Subpart B, Appendix A.		

Recognition Period

The U.S. Environmental Protection Agency will add eligible models to the ENERGY STAR Most Efficient 2014 product list for refrigerators from January 1, 2014 through December 30, 2014. The ENERGY STAR Most Efficient 2014 designation may be used in association with models recognized during this period for as long as the model remains on the market.