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Title 10 –Energy

Chapter II –Department of Energy

Subchapter D –Energy Conservation

Part 430 –Energy Conservation Program for Consumer Products

Subpart B –Test Procedures

◉ **Appendix M1 to Subpart B of Part 430—Uniform Test Method for Measuring the Energy Consumption of Central Air Conditioners and Heat Pumps**

Note: Prior to July 7, 2025, representations with respect to the energy use or efficiency of central air conditioners and heat pumps, including compliance certifications, must be based on testing conducted in accordance with:

- (a) Appendix M1 to this subpart, in the 10 CFR parts 200 through 499 edition revised as of January 1, 2023; or
- (b) This appendix M1.

Beginning July 7, 2025, and prior to the compliance date of amended standards for central air conditioners and heat pumps based on Seasonal Cooling and Off-mode Rating Efficiency (SCORE) and Seasonal Heating and Off-mode Rating Efficiency (SHORE), representations with respect to energy use or efficiency of central air conditioners and heat pumps, including compliance certifications, must be based on testing conducted in accordance with this appendix.

Beginning on the compliance date of amended standards for central air conditioners and heat pumps based on SCORE and SHORE, representations with respect to energy use or efficiency of central air conditioners and heat pumps, including compliance certifications, must be based on testing conducted in accordance with appendix M2 to this subpart.

Manufacturers may also certify compliance with any amended energy conservation standards for central air conditioners and heat pumps based on SCORE or SHORE prior to the applicable compliance date for those standards, and those compliance certifications must be based on testing in accordance with appendix M2 to this subpart.

1. Incorporation by Reference

In § 430.3, DOE incorporated by reference the entire standard for AHRI 210/240-2024, ANSI/ASHRAE 16, ASHRAE 37-2009 and ANSI/ASHRAE 116-2010. However, certain enumerated provisions of AHRI 210/240-2024, ANSI/ASHRAE 16, ASHRAE 37-2009 and ANSI/ASHRAE 116-2010, as set forth in sections 1.1 through 1.4 of this appendix, are inapplicable. To the extent there is a conflict between the terms or provisions of a referenced industry standard and the CFR, the CFR provisions control.

1.1. AHRI 210/240-2024

- (a) Section 1 Purpose is inapplicable,
- (b) Section 2 Scope is inapplicable,
- (c) The following subsections of Section 3 Definitions are inapplicable: 3.2.16 (Double-duct system), 3.2.20 (Gross capacity), 3.2.46 (Oil Recovery Mode), 3.2.51 (Published Rating), 3.2.63 (Standard Filter), 3.2.78 (Unitary Air-conditioner), 3.2.79 (Unitary Heat Pump),
- (d) Section 4 Classifications is inapplicable,
- (e) The following subsection of Section 5 Test Requirements is inapplicable: 5.1.6.2 (Outdoor Unit with No Match (OUWNM)),
- (f) The following subsections of Section 6 Rating Requirements are inapplicable: 6.1.8, 6.2, 6.3, 6.4 and 6.5
- (g) Section 7 Minimum Data Requirements for Published Ratings is inapplicable,
- (h) Section 8 Operating Requirements is inapplicable,
- (i) Section 9 Marking and Nameplate Data is inapplicable,
- (j) Section 10 Conformance Conditions is inapplicable,
- (k) Appendix A References—Normative is inapplicable,
- (l) Appendix B References—Informative is inapplicable,
- (m) Appendix C Secondary Capacity Check Requirements—Normative is inapplicable,
- (n) Appendix F Unit Configurations for Standard Efficiency Determination—Normative is inapplicable,
- (o) Appendix H Verification Testing—Normative is inapplicable,
- (p) Appendix I Controls Verification Procedure—Normative is inapplicable, and
- (q) Appendix J Determination of Cut in and Cut out temperatures—Normative is inapplicable.

1.2. ANSI/ASHRAE 37-2009

- (a) Section 1—Purpose is inapplicable,
- (b) Section 2—Scope is inapplicable, and
- (c) Section 4—Classification is inapplicable.

1.3. ANSI/ASHRAE 16-2016

- (a) Section 1—Purpose is inapplicable,
- (b) Section 2—Scope is inapplicable, and
- (c) Section 4—Classification is inapplicable.

1.4. ANSI/ASHRAE 116-2010

- (a) Section 1—Purpose is inapplicable,
- (b) Section 2—Scope is inapplicable,
- (c) Section 4—Classification is inapplicable,
- (d) Section 7—Methods of Test is inapplicable,
- (e) References is inapplicable,
- (f) Appendix A—Example Bin Calculations is inapplicable, and
- (g) Appendix B—Bibliography is inapplicable.

2. General

Determine the cooling capacity, heating capacity, and applicable energy efficiency metrics (SEER2, HSPF2, and EER2) in accordance with the specified sections of AHRI 210/240-2024 and the applicable provisions of ANSI/ASHRAE 16, ASHRAE 37-2009, and ANSI/ASHRAE 116-2010. The A_{Full} (cooling mode) and $H1_{Full}$ or $H1_{Nom}$ (heating mode, if applicable) shall have a secondary capacity check completed. For all other tests in each mode, it is permissible to not use a secondary capacity check. For cooling mode tests of variable capacity systems, the compressor shall operate at the same cooling full speed, measured by RPM or power input frequency (Hz), for both A_{Full} and B_{Full} tests. Additionally, the compressor shall operate at the same cooling minimum speed, measured by RPM or power input frequency (Hz), for the B_{Low} , F_{Low} , G_{Low} , and I_{Low} tests.

Sections 3, 4, and 5 of this appendix provide additional instructions for testing. In cases where there is a conflict, the language of this appendix takes highest precedence, followed, in order, by: AHRI 210/240-2024, ASHRAE 37-2009, ANSI/ASHRAE 16 and ANSI/ASHRAE 116-2010. Any subsequent amendment to a referenced document by the standard-setting organization will not affect the test

procedure in this appendix, unless and until the test procedure is amended by DOE. Material is incorporated as it exists on the date of the approval, and a notice of any change in the incorporation will be published in the FEDERAL REGISTER.

3. Off-Mode Power

Determine off-mode power, $P_{W, OFF}$, in accordance with section 11.3 and appendix G of AHRI 210/240-2024.

4. Outdoor Units With No Match (OUWNM)

4.1. **Definition.** *An Outdoor Unit that is not distributed in commerce with any indoor units, that meets any of the following criteria:*

- (a) Is designed for use with a refrigerant that makes the unit banned for installation when paired with a new Indoor Unit to create a new system, according to EPA regulations in 40 CFR chapter I, subchapter C,
- (b) Is designed for use with a refrigerant that has a 95 °F midpoint saturation absolute pressure that is ± 18 percent of the 95 °F saturation absolute pressure for R-22 and global warming potential greater than 150 per EPA regulations in 40 CFR 84.64, or
- (c) Is shipped without a specified refrigerant from the point of manufacture or is shipped such that more than two pounds of refrigerant are required to meet the charge per section 5.1.8 of AHRI 210/240-2024. This shall not apply if either:
 - (1) The factory charge is equal to or greater than 70% of the outdoor unit internal volume times the liquid density of refrigerant at 95 °F, or
 - (2) An A2L refrigerant is approved for use and listed in the certification report.

4.2. **Testing.** An OUWNM shall be tested at a single cooling air volume rate with an indoor coil having nominal tube diameter of 0.375 in and an NGIFS of 1.0 or less (as determined in section 5.1.6.3 of AHRI 210/240-2024). Tested values of CD^c and/or CD^h are not permitted. The default value, 0.25, shall be used for both cooling and heating mode testing.

5. Test Conditions

5.1. **Test Conditions for Certifying Compliance with Standards.** The following conditions specified in AHRI 210/240-2024 apply when testing to certify to the SEER2 and HSPF2 energy conservation standards in § 430.32(c).

- (a) For cooling mode, use the rating conditions specified in table 8 of AHRI 210/240-2024 and the fractional cooling bin hours in table 15 of AHRI 210/240-2024 to determine SEER2, and EER2 for models subject to regional standards in terms of EER2.

(b) For heat pump heating mode, use the rating conditions specified in table 8 of AHRI 210/240-2024 and the fractional heating bin hours specified for Region IV in table 16 of AHRI 210/240-2024 to determine the heating efficiency metric, HSPF2.

5.2. **Optional Representations.** Representations of EER2 made using the rating conditions specified in table 8 of AHRI 210/240-2024 are optional for models not subject to regional standards in terms of EER2. Representations of HSPF2 made using the rating conditions specified in table 8 of AHRI 210/240-2024 and the fractional heating hours specified for Regions other than Region IV in table 16 of AHRI 210/240-2024 are optional. Representations of COP_{peak} made using appendix K are optional.

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