

§ 431.96

10 CFR Ch. II (1–1–11 Edition)

(ii) U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Hearings and Dockets, “Test Procedures and Efficiency Standards for Commercial Air Conditioners and Heat Pumps,” Docket No. EE-RM/TP-99-460, 1000 Independence Avenue, SW., Washington, DC 20585.

(2) *Obtaining copies of test procedures.* You may obtain a copy of the ARI standards from the Air-Conditioning and Refrigeration Institute, 4301 North Fairfax Drive, Suite 425, Arlington, VA 22203, <http://www.ari.org/>. You can purchase a copy of the ISO Standard 13256-1 from the International Organization for Standardization, Case Postale 56, CH-1211, Geneva 20, Switzerland. <http://www.iso.ch/> or from the American National Standards Institute, 25 West 43rd Street, New York, New York 10036.

[69 FR 61969, Oct. 21, 2004, as amended at 71 FR 71370, Dec. 8, 2006]

§ 431.96 Uniform test method for the measurement of energy efficiency of small, large, and very large commercial package air conditioning and heating equipment, packaged terminal air conditioners, and packaged terminal heat pumps.

(a) *Scope.* This section contains test procedures for measuring, pursuant to EPCA, the energy efficiency of any small, large, or very large commercial package air-conditioning and heating equipment, packaged terminal air conditioner, or packaged terminal heat pump.

(b) *Testing and calculations.* Determine the energy efficiency of each covered product by conducting the test procedure(s) listed in the rightmost column of Table 1 of this section, that apply to the energy efficiency descriptor for that product, category, and cooling capacity.

TABLE 1 TO § 431.96—TEST PROCEDURES FOR ALL SMALL COMMERCIAL PACKAGE AIR-CONDITIONING AND HEATING EQUIPMENT, FOR LARGE COMMERCIAL PACKAGE AIR-CONDITIONING AND HEATING EQUIPMENT, FOR VERY LARGE COMMERCIAL PACKAGE AIR-CONDITIONING AND HEATING EQUIPMENT, AND FOR PACKAGED TERMINAL AIR-CONDITIONERS, AND PACKAGED TERMINAL HEAT PUMPS

Product	Category	Cooling capacity	Energy efficiency descriptor	Use tests, conditions and procedures ¹ in
Small Commercial Packaged Air Conditioning and Heating Equipment.	Air Cooled, 3 Phase, AC and HP.	<65,000 Btu/h	SEER	ARI Standard 210/240–2003.
			HSPF	ARI Standard 210/240–2003.
	Air Cooled AC and HP	≥65,000 Btu/h and <135,000 Btu/h	EER	ARI Standard 340/360–2004.
	Water Cooled and Evaporatively Cooled AC.	<65,000 Btu/h	COP	ARI Standard 340/360–2004.
		≥65,000 Btu/h and <135,000 Btu/h.	EER	ARI Standard 210/240–2003.
	Water-Source HP	<135,000 Btu/h	EER	ARI Standard 340/360–2004.
Large Commercial Packaged Air-Conditioning and Heating Equipment.	Air Cooled AC and HP	≥135,000 Btu/h and <240,000 Btu/h.	EER	ISO Standard 13256–1 (1998).
			COP	ISO Standard 13256–1 (1998).
	Water Cooled AC	≥135,000 Btu/h and <240,000 Btu/h.	EER	ARI Standard 340/360–2004.
	Evaporatively Cooled AC	≥135,000 Btu/h and <240,000 Btu/h.	EER	ARI Standard 340/360–2004.
Very Large Commercial Packaged Air-Conditioning and Heating Equipment.	Air Cooled AC and HP	≥240,000 Btu/h and <760,000 Btu/h.	EER	ARI Standard 340/360–2004.
			COP	ARI Standard 340/360–2004.
Packaged Terminal Air-Conditioners and Heat Pumps.	AC and HP	All	EER	ARI Standard 310/380–2004.
	HP	All	COP	ARI Standard 310/380–2004.

¹ Incorporated by reference, see § 431.95.

Department of Energy

§ 431.97

[71 FR 73170, Dec. 8, 2006]

ENERGY EFFICIENCY STANDARDS

§ 431.97 Energy efficiency standards and their effective dates.

(a) Each commercial air conditioner or heat pump (including single package vertical air conditioners and single

package vertical heat pumps) manufactured on or after January 1, 1994 (except for large commercial package air-conditioning and heating equipment, for which the effective date is January 1, 1995) must meet the applicable minimum energy efficiency standard level(s) set forth in Tables 1 and 2 of this section.

TABLE 1 TO § 431.97—MINIMUM COOLING EFFICIENCY LEVELS

Product	Category	Cooling capacity	Sub-category	Efficiency level ¹	
				Products manufactured until October 29, 2003	Products manufactured on and after October 29, 2003
Small Commercial Packaged Air Conditioning and Heating Equipment.	Air Cooled, 3 Phase.	<65,000 Btu/h	Split System	SEER = 10.0	SEER = 10.0.
			Single Package	SEER = 9.7	SEER = 9.7.
	Air Cooled	≥65,000 Btu/h and <135,000 Btu/h.	All	EER = 8.9	EER = 8.9.
			Water Cooled, Evaporatively Cooled, and Water-Source.	AC	EER = 9.3
Air Cooled	≥17,000 Btu/h and <65,000 Btu/h.	HP		EER = 9.3	EER = 11.2.
		Water Cooled, Evaporatively Cooled, and Water-Source.	AC	EER = 9.3	EER = 12.1.
Air Cooled	≥65,000 Btu/h and <135,000 Btu/h.		HP	EER = 9.3	EER = 12.0.
		Large Commercial Packaged Air Conditioning and Heating Equipment.	≥135,000 Btu/h and <240,000 Btu/h.	AC	EER = 10.5
Air Cooled	≥135,000 Btu/h and <240,000 Btu/h.			HP	EER = 10.5
		Water-Cooled and Evaporatively Cooled.	≥135,000 Btu/h and <240,000 Btu/h.	All	EER = 8.5
Packaged Terminal Air Conditioners and Heat Pumps.	All			All	EER = 9.6
		All	<7,000 Btu/h	All	EER = 8.88
All	≥7,000 Btu/h and ≤15,000 Btu/h.			EER = 10.0 – (0.16 × capacity [in kBtu/h at 95 °F outdoor dry-bulb temperature]).
		All	>15,000 Btu/h	EER = 7.6

¹ For equipment rated according to the ARI standards, all EER values must be rated at 95 °F outdoor dry-bulb temperature for air-cooled products and evaporatively cooled products and at 85 °F entering water temperature for water-cooled products. For water-source heat pumps rated according to the ISO standard, EER must be rated at 30 °C (86 °F) entering water temperature.
² Deduct 0.2 from the required EER for units with heating sections other than electric resistance heat.
³ Effective 10/29/2004, the minimum value became EER = 11.0.

TABLE 2 TO § 431.97—MINIMUM HEATING EFFICIENCY LEVELS

Product	Category	Cooling capacity	Sub-category	Efficiency level ¹	
				Products manufactured until October 29, 2003	Products manufactured on and after October 29, 2003
Small Commercial Packaged Air Conditioning and Heating Equipment.	Air Cooled, 3 Phase.	<65,000 Btu/h	Split System	HSPF = 6.8	HSPF = 6.8.
			Single Package	HSPF = 6.6	HSPF = 6.6.
	Water-Source	<135,000 Btu/h	Split System and Single Package.	COP = 3.8	COP = 4.2.
Air Cooled	≥65,000 Btu/h and <135,000 Btu/h.	All	COP = 3.0	COP = 3.0.	