

Department of Energy

§ 431.96

(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.

ant to EPCA, you are measuring the energy efficiency of any small or 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 or the two rightmost columns of Table 2 of this section, that apply to the energy efficiency descriptor for that product, category, and cooling capacity.

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

(a) *Scope.* This section contains test procedures you must follow if, pursu-

TABLE 1 TO § 431.96.—TEST PROCEDURES FOR CERTAIN SMALL COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT (ALL WATER-SOURCE EQUIPMENT AND OTHER EQUIPMENT LESS THAN 65,000 BTU/H), FOR 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
	Water Cooled and Evaporatively Cooled AC	<65,000 Btu/h	EER	ARI Standard 210/240-2003
	Water-Source HP	<135,000 Btu/h	EER	ISO Standard 13256-1 (1998)
COP			ISO Standard 13256-1 (1998)	
Large Commercial Packaged Air Conditioning and Heating Equipment	Air Cooled AC and HP	≥135,000 Btu/h and <240,000 Btu/h.	EER	ARI Standard 340/360-2000
			COP	ARI Standard 340/360-2000
	Water Cooled AC	≥135,000 Btu/h and <240,000 Btu/h.	EER	ARI Standard 340/360-2000
	Evaporatively Cooled AC.	≥135,000 Btu/h and <240,000 Btu/h.	EER	ARI Standard 340/360-2000
Packaged Terminal Air Conditioners and Heat Pumps	AC and HP	All	EER	ARI Standard 310/380-2004

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TABLE 1 TO § 431.96.—TEST PROCEDURES FOR CERTAIN SMALL COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT (ALL WATER-SOURCE EQUIPMENT AND OTHER EQUIPMENT LESS THAN 65,000 BTU/H), FOR LARGE COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT AND FOR PACKAGED TERMINAL AIR CONDITIONERS AND PACKAGED TERMINAL HEAT PUMPS—Continued

Product	Category	Cooling capacity	Energy efficiency descriptor	Use tests, conditions and procedures ¹ in
	HP	All	COP	ARI Standard 310/380–2004

¹ Incorporated by reference, see § 431.95.

TABLE 2 TO § 431.96.—TEST PROCEDURES FOR SMALL COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT ≥65,000 BTU/H AND <135,000 BTU/H (OTHER THAN WATER-SOURCE EQUIPMENT)

Category	Energy efficiency descriptor	Use tests, conditions and procedures ¹ in	With these additional stipulations ²
Air Cooled AC and HP.	EER COP	ARI Standard 340/360–2000.	1. Models with a desuperheater/water heating device: Establish Standard Ratings of units equipped with a refrigerant-to-water heat exchanger to heat domestic water (<i>i.e.</i> , a desuperheater), with the desuperheater not in operation. 2. <i>Models Manufactured Without Indoor Air-Circulating Fans:</i> (a) Establish Standard Ratings of units which do not have indoor air circulating fans furnished as part of the model, <i>i.e.</i> , split systems with indoor coil alone, by subtracting from the total cooling capacity 1,250 Btu/h per 1,000 cfm [775 W/m ³ /s], and by adding the same amount to the heating capacity. Increase total power input for both heating and cooling by 365 W per 1,000 cfm [226 W/m ³ /s] of indoor air circulated. (b) Equipment which does not incorporate an indoor fan, but is rated in combination with a device employing a fan, shall be rated as described in 6.1.3.2a of 340/360–2000. For equipment of this class which is rated for general use to be applied to a variety of heating units, the indoor-coil airflow rate shall be (1) specified by the manufacturer in Standard Ratings, not to exceed 37.5 SCFM/1,000 Btu/h [0.06 m ³ /s per 1,000 W] of rated capacity, or (2) the airflow rate obtained through the indoor coil assembly when the pressure drop across the indoor coil assembly and the recommended enclosures and attachment means is not greater than 0.30 inch of water [75 Pa], whichever is less.
Water Cooled AC	EER	ARI Standard 340/360–2000.	3. <i>Models with Indoor Fans, Not Made for Use With Field Installed Duct Systems:</i> (a) Equipment with indoor fans not made for use with field installed duct systems (free discharge) shall be rated at the indoor-coil airflow rate delivered when operating at 0 inches of water [0 Pa] external pressure as specified by the manufacturer. (b) Test indoor air-moving equipment not intended for use with field installed duct systems (free discharge) at 0 inches of water [0 Pa] external pressure.
Evaporatively Cooled AC.	EER	ARI Standard 340/360–2000.	4. <i>Water cooled models:</i> For Standard Ratings of water-cooled units add a total allowance for cooling tower fan motor and circulating water pump motor power inputs in the amount of 10.0 W per 1,000 Btu/h [34.1 W per 1,000 W] cooling capacity.

¹ Incorporated by reference, see § 431.95.

² The content of stipulations 1, 2(a), 2(b), 3(a), 3(b), and 4 is taken from Sections 2.2.5, 6.1, 6.1.3.3 (c), 6.1.3.3 (b), 6.1.3.6, and 6.1, respectively, of ARI Standard 210/240–2003.

ENERGY EFFICIENCY STANDARDS

§ 431.97 Energy efficiency standards and their effective dates.

Each commercial air conditioner or heat pump manufactured on or after January 1, 1994 (except for large com-

mercial 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.