



ASHRAE STANDARD

Method of Rating Unitary Spot Air Conditioners

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1. PURPOSE

The purpose of this standard is to establish a uniform set of requirements for rating unitary spot air conditioners.

2. SCOPE

This standard applies to unitary air conditioners that cool a zone within a space and discharge the rejected heat back into that space. Air leaving the evaporator and condenser is discharged into the same space, and there is no physical boundary separating those discharges. This standard does not apply to the rating and testing of individual assemblies, such as condensing units or direct expansion fan coil units for separate use, nor does it apply to air conditioners that are computer and data processing room air conditioners or are covered by ARI Standard 210/240.¹

3. DEFINITIONS

application rating: a rating based on tests or calculations performed at application rating conditions (other than standard rating conditions).

cooling efficiency ratio (CER): a ratio calculated by using the formula:

$$CER = (C + FE) / E$$

where

- C = cooling capacity, Btu/h (W),
- FE = fan electrical input, W × 3.413 Btu/W (W),
- E = total electrical input (W).

rating conditions: any set of operating conditions under which a single level of performance results and which causes only that level of performance to occur.

standards cooling efficiency ratio: a ratio calculated from the capacity and power input values obtained at standard rating conditions.

standard rating: a rating based on tests or calculations performed at standard rating conditions.

standard rating conditions: rating conditions used as the basis of comparison of performance characteristics.

unitary air conditioner: a unitary air conditioner consists of one or more factory-made assemblies, which normally include an evaporator or cooling coil and a compressor and condenser combination and may include a heating function.

unitary spot air conditioner: a unitary air conditioner that cools a zone within a space and discharges the rejected heat back into that space. Air leaving the evaporator and condenser is discharged into the same space, and there is no physical boundary separating these discharges.

4. CLASSIFICATION

Normally, unitary spot air conditioners within the scope of this standard can be classified as shown in Table 1.

5. RATING REQUIREMENTS

5.1 Cooling System Standard Ratings

Standard ratings shall be established at the standard rating conditions specified. The acceptable method of testing is provided in ANSI/ASHRAE 37-1988, *Methods of Testing for Rating Unitary Air-Conditioning and Heat Pump Equipment*² and with the test methods and procedures as described in this standard. References to indoor and outdoor sections in 8.5.1 of ANSI/ASHRAE 37-1988 refer to the cooling and heat rejection sides of a spot air conditioner, respectively.

Standard cooling capacity shall be stated as total (sensible plus latent) cooling capacity and sensible cooling capacity and shall be net values, reflecting the effects of circulating fan heat. Standard input ratings shall be the total power input to the compressor(s), fan(s), controls(s), air-cooled condenser fan(s), and pump(s) included as part of the model number(s).

5.1.1 Value of Standard Capacity Ratings. These ratings shall be expressed only in terms of Btu/h (W) in multiples as follows:

Capacities Btu/h [W]	Multiples Btu/h [W]
Less than 20,000 (5900)	100 (30)
20,000–37,800 (5900–11,000)	200 (60)
38,000–64,500 (11,100–18,900)	500 (160)
65,000 and above (19,000)	1000 (300)

5.1.2 Values of Standard Input Ratings

Standard input ratings shall be expressed in multiples of 100 watts.

5.1.3 Values of Standard Cooling Efficiency Ratings

Cooling efficiency ratios (CER) in (Btu/h)/W (W/W) shall be expressed in multiples to the nearest 0.1 (Btu/h)/W (0.03 W/W).

5.1.4 Standard Rating Conditions

The conditions of test for standard ratings shall include the following.

TABLE 1
Types of Unitary Spot Air-Conditioner

Designation	Type*	Heat Rejection	Arrangement	
Single package	SSP-A	Air	FAN	COMP
	SSP-E	Evap Cond	EVAP	COND
Condensing unit	SRCU-A-CB	Air	FAN	COND
Coil and blower	SRCU-E-C	Evap Cond	EVAP	COMP

* A suffix of “-O” following any of the above classifications indicates equipment not intended for use with field-installed duct systems.