

**ANSI/ASHRAE Standard 128-2011  
(Supersedes ANSI/ASHRAE Standard 128-2001)**



# ASHRAE STANDARD

## Method of Rating Portable Air Conditioners

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#### NOTE

Approved addenda, errata, or interpretations for this standard can be downloaded free of charge from the ASHRAE Web site at [www.ashrae.org/technology](http://www.ashrae.org/technology).

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## FOREWORD

*This standard is a revision of ANSI/ASHRAE Standard 128-2001, Method of Rating Unitary Spot Air Conditioners. The title has been changed in this edition of the standard to reflect the more common description of these products, "portable air conditioners." The scope of the standard has also been revised; instead of covering units of all sizes, it now applies only to units with a cooling capacity of 19,000 W (65,000 Btu/h) and greater. This change reflects the fact that smaller portable air conditioners are now covered by ANSI/AHAM Standard PAC-1 of the Association of Home Appliance Manufacturers, and a similar standard, Standard C370, has been issued by the Canadian Standards Association. Both of these cover portable air conditioners with capacities up to 19,000 W (65,000 Btu/h). Finally, this new edition of Standard 128 adopts the rating methodology of C370 (which the AHAM standard also uses) so that all portable air conditioners can be rated in the same way.*

**Note:** This standard is adapted from Standard C370-09 by the Canadian Standards Association, with appropriate modifications due to the difference in scope. Much of the text and all of the figures and tables are reproduced with the permission of Canadian Standards Association from C370-09, *Cooling Performance of Portable Air Conditioners*, which is copyrighted by CSA Standards, 5060 Spectrum Way, Mississauga ON, L4W5N6 Canada. While use of this material has been authorized, CSA shall not be responsible for the manner in which the information is presented, nor for any interpretations thereof.

## 1. PURPOSE

The purpose of this standard is to establish a uniform set of requirements for rating the cooling capacity of portable air conditioners.

## 2. SCOPE

**2.1** This standard applies to portable air conditioners with a rated cooling capacity of 19,000 W (65,000 Btu/h) and above, including those with heating capacity.

**2.2** The standard does not apply to

- a. the testing and rating of individual assemblies, such as condensing units or direct expansion fan-coil units for separate use;
- b. computer or data-processing-room air conditioners within the scope of ASHRAE Standard 127<sup>1</sup>; and
- c. room air conditioners within the scope of CAN/CSA-C368.1<sup>2</sup> or AHAM RAC-1.<sup>3</sup>

## 3. TERMINOLOGY

In this standard, "shall" is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard; "should" is used to express a recommendation or that which is advised but not required; and "may" is used to express an option or that which is permissible within the limits of the standard. Notes accompanying sections do not include requirements or alternative requirements; the purpose of a note accompanying a section is to separate from the text explanatory or informative material. Notes to tables and figures are considered part of the table or figure and may be written as requirements. Legends to equations and figures are considered requirements.

## 4. GENERAL REQUIREMENTS

**4.1** Portable air conditioners shall be designed, constructed, and assembled so as to meet the applicable electrical and refrigeration safety requirements for the Canadian and/or U.S. market, as appropriate. For Canada, applicable requirements are found in the Canadian Electrical Code, Part 1,<sup>4</sup> CSA Standards B52<sup>5</sup> and C22.2 No. 117.<sup>6</sup> For the United States, applicable requirements are found in UL Standard 484,<sup>7</sup> ASHRAE Standard 15<sup>8</sup> and the National Electrical Code (NEC).<sup>9</sup>

## 5. RATINGS REQUIREMENTS

**5.1 Standard Cooling Capacity and Standard Spot Cooling Capacity.** Standard Cooling Capacity and Standard Spot Cooling Capacity shall be stated as total (sensible and latent) cooling capacity and shall include the effects of evaporator circulating-fan heat. Input ratings shall be the total power input to the compressor(s), fan motor(s), control(s), and pump(s).

Ratings of water-cooled units that are not equipped with an integral pump shall include a total allowance for the cooling-tower fan motor and circulating water-pump motor power inputs of 34.1 W per 1000 W (10 W per 1000 Btu/h) cooling capacity.

**5.2 Standard Cooling and Spot Cooling Capacity and Input Ratings.** Standard Cooling Capacity and Spot Cooling Capacity ratings shall be expressed in the nearest multiple of 200 W (700 Btu/h).

**5.3 Standard Energy Efficiency Ratio (EER) Ratings.** Standard Energy Efficiency Ratio (EER) in W/W (Btu/W·h) shall be expressed in increments of 0.1.

**5.4 Standard Spot Cooling Efficiency (SCE) Ratings.** Standard Spot Cooling Efficiency (SCE) in W/W (Btu/W·h) shall be expressed in increments of 0.1.

**5.5 Application Ratings.** Ratings at conditions of temperature and/or air quantity other than those specified in Section 6 may be established as application ratings and shall be based upon the data produced by the tests prescribed in Section 6.

### 5.6 Published Ratings

**5.6.1** The performance ratings (EER, SCE, and cooling capacity) of portable air conditioners published by the manufacturer in its specifications, literature, or advertising shall be