



STANDARD

ANSI/ASHRAE Standard 128-2018
(Supersedes ANSI/ASHRAE Standard 128-2011)

Methods 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 website at www.ashrae.org/technology.

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FOREWORD

This is a revision of ANSI/ASHRAE Standard 128-2011, Method of Rating Portable Air Conditioners.

The scope continues to apply to portable air-conditioning units with a cooling capacity of 65,000 Btu/h (19,000 W) and greater. This reflects the fact that smaller portable air conditioners are covered by ANSI/AHAM Standard PAC-1, 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 65,000 Btu/h (19,000 W).

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 is applicable to commercial-type portable air-conditioning units with a rated cooling capacity of 65,000 Btu/h (19,000 W) and greater, 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 127¹; or
- c. room air conditioners within the scope of CAN/CSA-C368.1² or AHAM RAC-1³.

3. DEFINITIONS

In this standard, the word “shall” is used to express a requirement, 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 This standard addresses commercial portable air-conditioning units, which essentially consist of a self-contained

portable refrigerant-based cooling system to provide localized cooling in industrial and commercial applications.

4.2 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 1⁴, and CSA Standards B52⁵ and C22.2 No. 117⁶. For the United States, applicable requirements are found in UL Standard 484⁷, ASHRAE Standard 15⁸, and the National Electrical Code (NEC)⁹.

5. RATINGS REQUIREMENTS

5.1 Standard Cooling Capacity. Standard 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 compressors, fan motors, controls, and pumps.

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 10 W per 1000 Btu/h (34.1 W per 1000 W) cooling capacity.

5.2 Standard Cooling Capacity Rating. Standard cooling capacity ratings shall be expressed in the nearest multiple of 1000 Btu/h (300 W).

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

5.4 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 on the data produced by the tests prescribed in Section 6.

5.5 Published Ratings

5.5.1 The performance ratings (EER and cooling capacity) of portable air conditioners published by the manufacturer in its specifications, literature, or advertising shall be determined by the methods prescribed in Section 6.

5.5.2 The cooling capacity ratings shall be expressed in Btu/h (watts) in accordance with the tests defined in Section 6.3. Tons or other units shall not be used as capacity designations.

5.5.3 To comply with this standard, published ratings of standard cooling capacity, standard EER, and power input shall be based on data obtained in accordance with the tests specified in Section 6.

Portable air-conditioning production units, when tested, shall have measured ratings equal to or better than the published ratings, except for an allowance to cover testing and manufacturing variations. The allowance is such that each unit is required to have a measured rating of at least 95% of the unit's published ratings.

6. TESTS

6.1 Method of Test. Tests shall be conducted in accordance with this standard and the requirements provided in ASHRAE