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Method for Sound Testing of Portable Household Electric Room Air Cleaners

AHAM AC-2-2006 (R2016)

ASSOCIATION OF HOME APPLIANCE MANUFACTURERS

Leadership ➤ Knowledge ➤ Innovation

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PREFACE

The Association of Home Appliance Manufacturers (AHAM) develops standards in accordance with AHAM's "Policy and Procedures Governing Technical Standards" which states:

> "AHAM Standards shall be in the best interest, mutually, of consumers who use appliances, the industries which provide and service appliances, and other interested parties. They shall relate to actual use conditions, and be technically and scientifically sound."

Use or observance of AHAM standards is voluntary.

This standard contains test procedures which may be applied to any brand or model of portable household electric room air cleaner within the stated confines of the standard's limits of measurability for measuring performance. Results of tests in accordance with this standard may be publicly stated.

With regard to safety, AHAM recommends that all appliance products –both major and portable- manufactured or marketed in the Untied States be submitted to an appropriate independent laboratory for inspection and listing in conformance with the safety standards and procedures followed by such laboratories. The relevant standards for portable household electric room air cleaners are UL 867, "Standard for Electrostatic Air Cleaners" and UL 507, "Standard for Fans."

The annexes to this standard are noted as "normative" if the material included in the annex is considered part of the standard and as "informative" if the material included in the annex is provided for informational purposes only.

AHAM welcomes comments and suggestions regarding this standard. Any standard may be reviewed and improved as needed. All standards must be updated or confirmed at least every five years. Any interested party, at any time, may request a change in an AHAM standard. Such request should be addressed to AHAM's President, and should be accompanied by a statement of reason for the request and a suggested alternate proposal.

This standard may involve hazardous materials, operations, and equipment. This standard does not purport to address all of the safety problems associated with its use. It is the responsibility of whoever uses this standard to consult and establish appropriate safety and health practices and determine the applicability of any regulatory limitations prior to use.

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1. PURPOSE

The purpose of this standard is to establish a method to determine the sound rating of portable household electric room air cleaners. The sound rating is comprised of a set of sound levels that includes:

a. A-Weighted Sound Power Level, L_{WA} (unit: dB re 1 pW)

b. Loudness, s_t (unit: $sone_o$ - Stevens)

Both of the ratings (sound power level and loudness) shall be included in the test report.

Established in the standard are definitions, tests, calculations, ratings, and minimum data requirements for published ratings and conformance conditions.

The standard method provides a means to compare and evaluate different models of portable household electric room air cleaners regarding their generated sound levels.

The standard methods of measurement are not intended to inhibit improvement and innovation in product testing, design, or performance. This standard is subject to review and amendment as technology advances.

2. SCOPE

This standard includes sections on definitions, test room requirements, and the installation mounting and operating conditions under which the portable household electric - room air cleaners are tested.

3. DEFINITIONS

3.1 Portable Household Electric Room Air Cleaner.

An electric appliance with the function of removing particulate matter from the air and which can be moved from room to room.

3.2 Design Characteristics of Portable Household Electric Room Air Cleaners

3.2.1 Fan with Filter. Air cleaners that operate with an electrical source of power and that contain a motor and fan for drawing air through a filter media.

3.2.2 Fan and Electrostatic Plates. Air cleaners that operate with a fan and that incorporate electrically charged plates or wires to electrostatically collect particulate matter. Such devices may include a filter(s).

3.2.3 Fan, Filter and Ion Generator. Air cleaners that incorporate an ion generator in addition to a fan and filter.

3.2.4 Ion Generator. Air cleaners that incorporate an ion generator only.

3.2.5 Other Types. A device that has the stated capacity to reduce the concentration of particulate matter in a room. Such devices do not have to