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AMCA 311-16

Certified Ratings Program Product Rating Manual for Fan Sound Performance



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AMCA Publication 311-16

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AMCA Publications

Authority AMCA Publication 311-16 was adopted by the membership of the Air Movement and Control Association International Inc. on November 7, 2016. Current approved catalogs do not require updating.

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Certified Ratings Program

Product Rating Manual for Fan Sound Performance

1. Purpose

The purpose of this manual is to prescribe/establish definitions and specifications to be used in connection with the AMCA Certified Ratings Program for the sound performance of fans.

2. Product Scope

Products that can be licensed by AMCA International to bear the AMCA Certified Ratings Program seal for sound ratings are centrifugal fans, axial fans, power roof ventilators, air curtains, agricultural fans and other air moving devices within the product scope of AMCA.

The program applies only to complete air-moving devices that are already licensed to bear the AMCA Certified Ratings Program seal for air performance.

The program applies to fans within the scope of AMCA for which performance catalogs are published and made available to the public. It does not apply to special units for which performance ratings are not published. When performance ratings for both licensed and non-licensed products are contained in the same catalog, there must be a clear distinction made between licensed and non-licensed products, as required in AMCA Publication 11.

When one or more licensed products are used as component parts of a larger unit, the AMCA Certified Ratings Program seal for sound ratings may not be applied to the complete unit unless the unit itself has been licensed in accordance with this program.

3. General Guidelines for Developing Fan Sound Ratings

3.1 Definitions

All technical terms specific to sound are defined in the appropriate test standards referenced herein.

3.1.1 Spherical sone

The loudness, in sones, of the sound pressure level at a distance of 1.5 m (5 ft) from the acoustic center of the fan in a spherical free field.

3.1.2 Hemispherical sone

The loudness, in sones, of the sound pressure level at a distance of 1.5 m (5 ft) from the acoustic center of the fan in a hemispherical free field. A hemispherical sone is calculated in accordance with the procedures found in ANSI/AMCA Standard 301. Licensees may label a hemispherical sone rating as a "fan sone." In this document, the term "hemispherical sone" will be used to clearly differentiate the two terms.

3.2 Rating development

The sound performance rating of a fan or a series of dynamically similar fans are developed from tests conducted in accordance with ANSI/AMCA Standard 300, ANSI/AMCA Standard 320, ISO 5136 or other such standards as allowed under AMCA Publication 111.

The performance rating of a fan can be developed for a range of speeds from the test of the fan at one speed utilizing the procedures defined in ANSI/AMCA Standard 301.

The performance rating of one or more larger fan sizes can be developed based on the test of a smaller fan utilizing the procedures defined in ANSI/AMCA Standard 301.