AMCA Publication 211-05 (Rev. 2/08)

Certified Ratings Program - Product Rating Manual for Fan Air Performance

AIR MOVEMENT AND CONTROL ASSOCIATION INTERNATIONAL, INC.

The International Authority on Air System Components

AMCA PUBLICATION 211-05
(Revised 2/08)

Certified Ratings Program -
Product Rating Manual for Fan Air Performance

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Authority

This publication was approved by the AMCA International membership on 13 February 2005. This edition of Publication 211, taken together with AMCA Publication 11-03, supersedes AMCA Publication 211-94 (Rev. 11/98). The requirements of this program became effective on 1 March 2005.

The November 2006 revision was approved by the Board and became effective on 19 October 2006 and adds Subsection C.4.3.

The March 2007 revision was approved by the board and became effective on 1 March 2007 and adds Rating Method L for induced flow fans.

The September 2007 revision was approved by the board and became effective on 1 September 2007 and clarifies circulating fan sections.

Forward

With the adoption of AMCA Publications 11-03 and 211-04, AMCA Publication 211-94 was split into two documents. (1) Certified Ratings Program Operating Manual; (2) Product Rating Manual for Fan Air Performance Ratings. The latter contains additional certification requirements that pertain to fans only.

AMCA 211 has been growing as the scope of AMCA International has been growing. The major impetus behind this revision of the program was to separate the common program elements of all AMCA International Certified Ratings Programs and the specific requirements of each individual program. In addition to this major change, the committee formed to review the entire program consisted of multinational industry leaders.

Some of the major revisions to the program include: The addition of an efficiency program; the addition of jet tunnel fan requirements; and a change to the check test tolerances for products obtained via the market place. As is always the case, many minor changes were made to increase the clarity and readability of the program.

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Related AMCA Standards and Publications

AMCA Publication 11-03	*Certified Ratings Program, Operating Manual*
AMCA Standard 210-99	*Laboratory Methods of Testing Fans for Aerodynamic Performance Rating*
AMCA Publication 261	*Directory of Products Licensed to Use the AMCA Certified Ratings Seal*
AMCA Publication 262	*AMCA Directory of Agricultural Products with Certified Ratings*

Other AMCA programs

AMCA Publication 111-99	*Laboratory Accreditation Program*

Applicable forms

CRP 8	*Application for AMCA Certified Ratings Seal*

Note: The latest editions of each of the above publications should be used.

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Certified Ratings Program - Product Rating Manual for Fan Air Performance

1. Purpose

The purpose of this manual is to prescribe technical procedures to be used in connection with the AMCA Certified Ratings Program for Fans - Air Performance.

2. Product Scope

Products that can be licensed by AMCA to bear the AMCA Certified Ratings Seal are those defined in AMCA Standard 99-0068, ISO 13349 and IEC 60335-2-80, and are within the product scope of AMCA International.

The program applies only to fans, and is not applicable to their component parts such as fan impellers or impellers and housings.

3. Definitions

All definitions found in AMCA Publication 11, as well as the following, apply to this program.

3.1 Appurtenance (accessory) - Any item in or on the inlet or discharge air stream that affects the performance of the fan.

3.2 AMCA Certified Ratings Program - Air Performance - A program for certifying a product's aerodynamic performance ratings, as defined in this document.

3.3 Performance rating(s) - A statement of the pressure performance and power versus airflow at a given speed at standard inlet air density or other specified density. Efficiency may also be included in the performance ratings at the option of the licensee. Power shall be specified as impeller, shaft, or motor power, as appropriate. The rating may be published in tabular and/or graphical format. Specific performance rating requirements are given in the Product Rating Requirement Sections of this document.

3.4 Shall and should - The word "shall" is understood to be a mandatory requirement and the word "should" is understood to be advisory.

4. Data Submittal Requirements

The following data shall be submitted with the CRP-8 application form:

Test data for each test conducted (observations of all variables measured for each test point), which must conform to the test standard used.

Results of the test(s) corrected to standard air density, and constant speed, where applicable.

Drawings of each size of the product line, showing the dimensions specified in Annex A for the type of product being submitted.

Photograph of each test setup.

5. Drive Methods

Various methods may be used to drive the test unit and measure the power input to the fan. The power measurements may or may not include the power transmission losses, but for fans supplied with shaft and bearings, the bearing losses shall be included in the fan power input measurement. See Annex D for more information for allowable methods of accounting for bearing and/or power transmission losses when calculating test data to other sizes and speeds.

Direct driven fans using "low-slip" (e.g. squirrel cage induction motors) motors may be driven by a dynamometer or a calibrated motor when the fan power rating is the output power of the dynamometer or calibrated motor. When the fan power rating is the motor input watts, the fan shall be driven by its own motor. Direct driven fans using "high slip" (e.g. shaded pole or capacitor start motor) motors shall be driven by their own motors, and the power rating shall be the motor input watts.

Motor calibrations shall be performed by the AMCA Testing Laboratory, the motor manufacturer, or by an AMCA Accredited Laboratory. Motor calibrations shall be performed at the voltage and frequency to be used for the fan test. The motor calibration shall be conducted at the motor's operating temperature.