

ANSI/AMCA Standard 260-13

Laboratory Methods of Testing Induced Flow Fans for Rating

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**AIR MOVEMENT AND CONTROL
ASSOCIATION INTERNATIONAL, INC.**

The International Authority on Air System Components

ANSI/AMCA Standard 260-13

Laboratory Methods of Testing Induced Flow Fans for Rating



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AMCA Publications

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Related AMCA Documents

Related Publications	AMCA Publication 11	Certified Ratings Program - Operating Manual
	AMCA Publication 211	Certified Ratings Program - Air Performance
Related Standards	ANSI/AMCA Standard 210	Laboratory Methods of Testing Fans for Aerodynamic Performance Rating

Contents

- 1. Purpose and Scope 1
- 2. Normative References 1
- 3. Units of Measurement 1
- 4. Symbols and Subscripts 1
- 5. Definitions 1
 - 5.1 Induced flow fan 1
 - 5.2 Outlet airflow 1
 - 5.3 Outlet area 1
 - 5.4 Nozzle area 1
- 6. Instruments and Methods of Measurement 1
 - 6.1 Variable supply and exhausts system 1
- 7. Test Setups 1
 - 7.1 Inlet chamber or inlet duct setup 2
 - 7.2 Test for measurement of outlet airflow 2
- 8. Observations and Conduct of Test 2
 - 8.1 Data recording requirements for the outlet airflow test as defined in Section 7.2 2
- 9. Calculations 2
 - 9.1 Calculation requirements for the outlet airflow test as defined in Section 7.2. 2
 - 9.2 Total efficiency calculation 2
 - 9.3 Compressibility factor. 2
- 10. Report and Results of Test 3

Laboratory Methods of Testing Induced Flow Fans for Rating

1. Purpose and Scope

The purpose of this standard is to establish a uniform laboratory method for determining an induced flow fan's aerodynamic performance in terms of airflow rate, pressure developed, power consumption, air density, speed of rotation and efficiency. This standard is an adjunct to ANSI/AMCA 210 in order to accommodate the induced flow fan's unique characteristics.

It is not the purpose of this standard to specify the testing procedures to be used for design, production or field testing.

The scope of this standard is limited to induced flow fans, as defined below.

The parties to a test, for guarantee purposes, may agree on exceptions to this standard in writing prior to the test. However, only tests which do not violate any mandatory requirements of this standard shall be designated as tests conducted in accordance with this standard.

2. Normative References

The following standard contains provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below.

ANSI/AMCA 210: Laboratory Methods of Testing Fans for Aerodynamic Performance Rating

3. Units of Measurement

All units used in this standard are defined in ANSI/AMCA 210. The primary units are SI units (The International System of Units (Le Système International d'Unités), with I-P (inch-pound) units given as the secondary reference.

4. Symbols and Subscripts

All symbols and subscripts are defined in ANSI/AMCA 210 with the following addition. For an induced flow fan, there are two planes of exit. Where the main (inlet) flow exits the nozzle, the outlet plane will preserve the ANSI/AMCA 210 definition of plane 2. The plane at the end of the wind band will be identified by a subscript "9". Thus the average veloc-

ity at the exit of the nozzle is identified as V_2 , and the average velocity at the exit of the wind band is identified as V_9 .

5. Definitions

All definitions are given in ANSI/AMCA 210 with the following additions:

5.1 Induced flow fan

An induced flow fan is a housed fan whose outlet airflow is greater than its inlet airflow due to induced airflow. Those induced flow fans under the scope of this standard will include a nozzle and a windband. All of the flow entering the inlet will exit through the nozzle. The flow exiting the windband will include the nozzle flow plus the induced flow.

5.2 Outlet airflow

The outlet airflow is the airflow at the inlet plus the induced airflow. It is the total flow exiting the windband.

5.3 Outlet area

The outlet area is the inside area measured in the plane of the outlet opening of the windband.

5.4 Nozzle area

The nozzle area is the inside area measured in the plane(s) of the outlet opening(s) of the nozzle.

6. Instruments and Methods of Measurement

All of the requirements for instruments and methods of measurements found in ANSI/AMCA 210 are applicable to testing done in accordance with this standard

6.1 Variable supply and exhausts system

A means of varying the point of operation shall be provided in a laboratory setup. Throttling devices may be used to control the point of operation of the fan. Such devices shall be located on the end of the duct or chamber and should be symmetrical about the duct or chamber axis.

7. Test Setups

The two tests described in Sections 7.1 and 7.2 are required for induced flow fans.