

ANSI/AMCA Standard 220-21

Laboratory Methods of Testing Air Curtain Units for Aerodynamic Performance Rating

An American National Standard
Approved by ANSI on May 4, 2021



Air Movement and Control Association International

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AMCA Publications

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Laboratory Methods of Testing Air Curtain Units for Aerodynamic Performance Rating

1. Purpose

The purpose of this standard is to establish uniform methods for laboratory testing of air curtain units (ACUs) to determine aerodynamic performance in terms of *airflow* rate, ACU outlet air velocity uniformity, electrical power consumption and air velocity projection for rating, guarantee or code compliance purposes.

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

2. Scope

The scope of this standard covers the performance testing of ACUs.

3. 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 Standard 210-16, Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating

4. Definitions/Units of Measure/Symbols

4.1 Definitions

4.1.1 Absolute pressure

The value of a pressure when the datum pressure is absolute zero. It is always positive.

4.1.2 ACU

See air curtain unit (ACU).

4.1.3 Air curtain (ACU airstream)

A directionally controlled airstream with a minimum width-to-depth aspect ratio of 5:1. When applied across the entire height and width of an opening, an air curtain reduces the infiltration or transfer of air from one side of the opening to the other and inhibits the passage of insects, dust or debris. For the purposes of this standard, “air curtain” and “ACU airstream” are synonymous.

4.1.4 Air curtain average core velocity (V_{ca})

The average of air curtain core velocities measured along the air curtain width at a defined plane. For the purposes of this standard, measurement planes are defined per Section 8.2.3.

4.1.5 Air curtain average outlet air velocity (V_a)

The airflow rate of an air curtain per unit area of discharge, calculated when the airflow rate is divided by the air curtain discharge area.