Calculation of the Fan Energy Index

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ANSI/AMCA Standard 208-18

Calculation of the Fan Energy Index

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AMCA Publications

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Calculation of the Fan Energy Index

1. Purpose and Scope

This standard defines the calculation method for the fan energy index (FEI), which is an energy efficiency metric for fans inclusive of motors and drives. This metric provides a standardized and consistent basis to compare fan energy performance across fan types and sizes at a given fan duty point.

Fan specifiers can use FEI to understand and communicate the fan efficiency design intent. Legislative or regulatory bodies can use FEI to define the energy efficiency requirements of fans.

The scope includes all fan and motor sizes and all applications, including fans with fan air performance based on tests in accordance with one of the following fan test standards: ANSI/AMCA Standard 210, ANSI/AMCA Standard 230, ANSI/AMCA Standard 250, ANSI/AMCA Standard 260, ISO 5801, or ISO 13350. All other fans are excluded (including air curtain units that are tested in accordance with ANSI/AMCA Standard 220).

2. Normative References

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

1. ANSI/AMCA Standard 99-16
   Standards Handbook
2. ANSI/AMCA Standard 207-17
   Fan System Efficiency and Fan System Input Power Calculation
3. ANSI/AMCA Standard 210-16/ASHRAE Standard 51-16
   Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating
4. AMCA Publication 211
   Certified Ratings Program Product Rating Manual for Fan Air Performance
5. ANSI/AMCA Standard 230-15
   Laboratory Methods of Testing Air Circulating Fans for Rating and Certification
6. ANSI/AMCA Standard 250-12
   Laboratory Methods of Testing Jet Tunnel Fans for Performance
7. ANSI/AMCA Standard 260-13
   Laboratory Methods of Testing Induced Flow Fans for Rating
8. IEC 60034-2-1 Ed. 2.0 b:2014
   Rotating electrical machines—Part 2-1: Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles)
9. IEC 60034-30-1 Ed. 1.0 (2014-03)
   Rotating electrical machines—Part 30-1: Efficiency classes of line operated AC motors (IE code)
10. IEEE 112-2004
    IEEE Standard Test Procedure for Polyphase Induction Motors and Generators
11. IEEE 114-2010
    IEEE Standard Test Procedure for Single-Phase Induction Motors
    Fans—Performance testing using standardized airways
    Fans—Performance testing of jet fans