

Performance of air handlers in residential space conditioning systems



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CANADIAN STANDARDS
ASSOCIATION

CSA Standards Update Service

C823-11

May 2011

Title: *Performance of air handlers in residential space conditioning systems*

Pagination: **29 pages** (ix preliminary and 20 text), each dated **May 2011**

To register for e-mail notification about any updates to this publication

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CSA Standard

C823-11

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space conditioning systems***



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*Published in May 2011 by Canadian Standards Association
A not-for-profit private sector organization
5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6
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ISSN 1978-1-55491-525-5

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Preface

This is the first edition of CSA C823, *Performance of air handlers in residential space conditioning systems*.

This Standard specifies requirements for measuring both the air delivery and the electrical energy consumption of air handlers in residential space conditioning systems over a range of static pressures and speed control settings. Based on those measurements, performance ratings are developed for air handlers for each of their operating control settings using a standardized system resistance curve. An annual electrical energy consumption rating is also calculated. The actual performance and annual electricity use of air handlers can vary from the ratings because of differences in how they are installed and used.

Figures 1 to 3 have been adapted from ANSI/AMCA 210-07, with permission.

CSA acknowledges that the development of this Standard was made possible, in part, by the financial support of BC Hydro, the Canadian Electricity Association (CEA), Manitoba Hydro, Natural Resources Canada (NRCan), the Ontario Ministry of Energy (OME), the Ontario Power Authority (OPA), and SaskPower.

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

This Standard was prepared by the Subcommittee on Fan/Motor Combinations, under the jurisdiction of the Technical Committee on Heating, Ventilation, Air Conditioning, and Refrigeration and the Strategic Steering Committee on Performance, Energy Efficiency, and Renewables, and has been formally approved by the Technical Committee.

May 2011

Notes:

- (1) Use of the singular does not exclude the plural (and vice versa) when the sense allows.
- (2) Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.
- (3) This publication was developed by consensus, which is defined by CSA Policy governing standardization — Code of good practice for standardization as “substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity”. It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this publication.
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 - (d) rationale for the change.

C823-11

Performance of air handlers in residential space conditioning systems

1 Scope

1.1

This Standard applies to ducted air handler units that are used to supply and/or circulate conditioned air in residential central space conditioning systems such as furnaces, heat pumps, combination air handlers, and fan coils.

1.2

This Standard specifies the test procedure and calculations for determining performance ratings for the air delivery and electrical energy consumption of air handlers. It does not address thermal performance ratings for air handler systems.

1.3

This Standard does not apply to draft inducer fans, exhaust fans, or heat/energy recovery ventilators.

1.4

In CSA standards, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard; “should” is used to express a recommendation or that which is advised but not required; and “may” is used to express an option or that which is permissible within the limits of the standard.

Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material.

Notes to tables and figures are considered part of the table or figure and may be written as requirements.

Annexes are designated normative (mandatory) or informative (nonmandatory) to define their application.

1.5

The values given in SI units are the units of record for the purposes of this Standard. The values given in parentheses are for information and comparison only.

2 Reference publications

This Standard refers to the following publications, and where such reference is made, it shall be to the edition listed below.

CSA (Canadian Standards Association)

CAN/CSA-C62301-07

Household electrical appliances — Measurement of standby power