AHRI Standard 1061-2023 (SI)

2023 Standard for

Performance Rating of Air-to-Air Exchangers for Energy Recovery Ventilation Equipment

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ICS Code: 23.120

Note:

This standard supersedes AHRI Standard 1061-2018 (SI).

For I-P ratings, see AHRI Standard 1060-2023 (I-P).

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Intent

This standard is intended for the guidance of the industry, including manufacturers, engineers, installers, contractors, and users.

Review and Amendment

This standard is subject to review and amendment as technology advances.

2023 Edition

This edition of AHRI Standard 1061 (SI), *Performance Rating of Air-to-Air Exchangers for Energy Recovery Ventilation Equipment*, was prepared by the Air-to-Air Energy Recovery Ventilation (ERV) Standards Technical Committee. The standard was approved by the Applied Standards Subcommittee on 8 November 2023.

Origin and Development of AHRI Standard 1061 (SI)

The initial publication was AHRI Standard 1061 (SI)-2011, *Performance Rating of Air-to-Air Heat Exchangers for Energy Recovery Ventilation Equipment.*
Subsequent revisions were:

AHRI Standard 1061 (SI)-2013, *Performance Rating of Air-to-Air Heat Exchangers for Energy Recovery Ventilation Equipment*

ANSI/AHRI Standard 1061 (SI)-2014, *Performance Rating of Air-to-Air Heat Exchangers for Energy Recovery Ventilation Equipment*

AHRI Standard 1061-2018 (SI), *Performance Rating of Air-to-Air Heat Exchangers for Energy Recovery Ventilation Equipment*

Summary of Changes

AHRI Standard 1061-2023 (SI) contains the following updates to the previous edition:

- Revised range of standard *rating conditions* for supply flow ratio and *pressure differential*.
- Updated requirements for *published ratings*.
- Pressure drop correction moved to Section 4 and clarified method to determine density and viscosity.
- Increased allowances for sensible *effectiveness* and latent *effectiveness*.
- Testing tolerances moved to Table 2 and revised.
- Added calculation of standard airflow.
- Added *sensible energy recovery ratio*.
- Corrected units in Appendix C.
- Increased maximum temperature for laboratory ambient conditions.

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Committee Personnel

Standards Working Group (SWG) – AHRI 1060 & 1061

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Alois Malik Multistack LLC	Product Manufacturer	Primary	SC, USA
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Jaime Yeh	AHRI Staff Liaison		

Standards Working Group (SWG) – AHRI 1060 & 1061 Scope:

The purpose of the SWG – AHRI 1060 & 1061 is to complete the project to revise AHRI Standard 1060-2018 (I-P) and AHRI Standard 1061-2018 (SI).

Standards Working Groups (SWGs) are temporary and are formed by and report to the Standards Technical Committee (STC). The work of the SWG shall be within the scope of the STC as defined by the Standards Subcommittee (SSC).

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Alois Malik Multistack LLC	Product Manufacturer	Primary	SC, USA
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Air-to-Air Energy Recovery Ventilation (ERV) Standards Technical Committee Scope:

The Air-to-Air Energy Recovery Ventilation (ERV) Standards Technical Committee is responsible for the development and maintenance of AHRI standards and guidelines pertaining to Performance Rating of *Air-to-Air Exchangers* for Energy Recovery Ventilation Equipment, Calculating the Efficiency of Energy Recovery Ventilation and its Effects on Efficiency and Size of Building HVAC Systems, and Selecting, Sizing and Specifying Packaged *air-to-air energy recovery ventilation equipment*.

Out of scope for this STC include Chillers, Variable Frequency Drives (VFD), Humidifiers, Air Distribution, Chilled Beams, Unit Ventilators, Room Fan Coils, Heat Exchange, Air Handling, Air Filters, Dehumidifiers, Air Cooling and Air Heating Coils (ACAH), Thermal Storage Equipment (TSE) and Datacom equipment (DCOM).

Product definitions are as defined within AHRI 1060 and 1061, Guideline V, and Guideline W.

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Applied Standards Subcommittee

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Applied Standards Subcommittee Scope:

The scope of the Applied Standards Subcommittee is standards and guidelines related to the end products that are part of the AHRI Applied Industry Sector. (The definition of and list of products associated with each sector are found on the AHRI website at www.ahrinet.org.)

These lists represent the membership at the time the Standards Working Group, Standards Technical Committee, and Standards Subcommittee were balloted on the final text of this edition. Since that time, changes in the membership may have occurred. Membership on these committees shall not in and of itself constitute an endorsement by the committee members or their employers of any document developed by the committee on which the member serves.

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PERFORMANCE RATING OF AIR-TO-AIR EXCHANGERS FOR ENERGY RECOVERY VENTILATION EQUIPMENT

Section 1. Purpose

This standard establishes definitions, test requirements, rating requirements, minimum data requirements for *published ratings*. marking and nameplate data, and conformance conditions for *air-to-air exchangers* intended for use in *air-to-air energy recovery ventilation equipment* (*AAERVE*).

Section 2. Scope

2.1 Scope

This standard applies to factory-made *air-to-air exchangers* for use in *AAERVE* as defined in Section 3.

2.2 Exclusions

This standard does not apply to the rating and testing of heat exchangers joined by circulated heat transfer medium (run-around loop). A run-around loop employs liquid-containing coils connected in a closed loop and placed in each of two or more airstreams.

Section 3. Definitions

All terms in this document shall follow the standard industry definitions in the ASHRAE Terminology website unless otherwise defined in this section.

3.1 Expression of Provisions

Terms that provide clear distinctions between requirements, recommendations, permissions, options, and capabilities.

3.1.1 "Can" or "cannot"

Express an option or capability.

3.1.2 "May"

Signifies a permission expressed by the document.

3.1.3 "Must"

Indication of unavoidable situations and does not mean that an external constraint referred to is a requirement of the document.

3.1.4 "Shall" or "shall not"

Indication of mandatory requirements to strictly conform to the standard and where deviation is not permitted.

3.1.5 "Should" or "should not"

Indication of recommendations rather than requirements. In the negative form, a recommendation is the expression of potential choices or courses of action that is not preferred but not prohibited.

3.2 Standard Specific Definitions

3.2.1 Air-to-Air Energy Recovery Ventilation Equipment (AAERVE)

Energy recovery components and packaged energy recovery ventilation units that employ *air-to-air exchangers* to recover energy from exhaust air for the purpose of pre-conditioning outdoor air prior to supplying the conditioned air to the space, either directly or as part of an air-conditioning (to include air heating, air cooling, air circulating, air cleaning, humidifying and dehumidifying) system.

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