AHRI Standard 1060 (I-P)

2013 Standard for

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

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**IMPORTANT**

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## AHRI CERTIFICATION PROGRAM PROVISIONS

### Scope of the Certification Program

The certification program includes Air-to-Air Heat Exchangers for use in Air-to-Air Energy Recovery Ventilation Equipment, rated at or above 50 scfm but below or equal to 5,000 scfm at AHRI Standard Rating Conditions. In addition, Air-to-Air Heat Exchangers for use in Air-to-Air Energy Recovery Ventilation Equipment rated above 5,000 scfm are included if the participant's basic model group(s) for those models include at least one model rated at or above 50 scfm but below or equal to 5,000 scfm.

This certification program does not include heat exchangers joined by circulated heat transfer medium (run-around loop).

### Certified Ratings

The following certification program ratings are verified by test:

1. Sensible Effectiveness at 100% Summer, 75% Summer, 100% Winter, and 75% Winter
2. Latent Effectiveness at 100% Summer, 75% Summer, 100% Winter, and 75% Winter
3. Pressure Drop at 100% CFM lab ambient conditions
4. Exhaust Air Transfer Ratio (EATR) at three pressure differentials, 0.00 in $H_2O$ and two more within the scope of the program
5. Outdoor Air Correction Factor (OACF) at three pressure differentials, 0.00 in $H_2O$ and two more within the scope of the program

Note:
This standard supersedes AHRI Standard 1060-2011.
For SI ratings, see AHRI Standard 1061 (SI)-2013.

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

## Section 1. Purpose

**1.1** *Purpose*. The purpose of this standard is to establish for Air-to-Air Heat Exchangers intended for use in Air-to-Air Energy Recovery Ventilation Equipment: definitions; test requirements; rating requirements; minimum data requirements for Published Ratings; marking and nameplate data; and conformance conditions.

**1.1.1** *Intent*. This standard is intended for the guidance of the industry, including manufacturers, designers, installers, contractors and users.

**1.1.2** *Review and Amendment*. This standard is subject to review and amendment as technology advances.

## Section 2. Scope

**2.1** *Scope*. This standard applies to factory-made Air-to-Air Heat Exchangers for use in Air-to-Air Energy Recovery Ventilation Equipment 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 will follow the standard industry definitions in the ASHRAE Wikipedia website (http://wiki.ashrae.org/index.php/ASHRAEwiki) unless otherwise defined in this section.

**3.1** *Air-to-Air Energy Recovery Ventilation Equipment (AAERVE)*. Energy recovery components and packaged energy recovery ventilation units which employ Air-to-Air Heat 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.

**3.2** *Air-to-Air Heat/Energy Exchanger (hereinafter "Exchanger")*. A device that transfers heat/energy from an exhaust airstream to a separated supply airstream. Air-to-Air Heat Exchangers are also referred to as energy recovery components.

**3.2.1** *Heat Pipe Heat Exchanger*. A device employing tubes charged with a fluid for the purpose of transferring sensible energy from one airstream to another. Heat transfer takes place through the vaporization of the fluid exposed to the warmer airstream and condensation of the fluid in the cooler airstream.

**3.2.2** *Plate Heat Exchanger*. A device for the purpose of transferring energy (sensible or total) from one airstream to another with no moving parts. This Exchanger may incorporate parallel, cross or counter flow construction or a combination of these to achieve the energy transfer.

**3.2.3** *Rotary Heat Exchanger*. A device incorporating a rotating cylinder or wheel for the purpose of transferring energy (sensible or total) from one airstream to the other. It incorporates heat transfer material, a drive mechanism, a casing or frame, and includes any seals which are provided to retard the bypassing and leakage of air from one airstream to the other.

**3.3** *Airflow.*

**3.3.1** *Entering Supply Airflow (OA).* The supply airstream (outdoor air) before passing through the Exchanger, also



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