

ANSI/AHRI Standard 520 (formerly ARI Standard 520)

2004 Standard for

PERFORMANCE RATING OF POSITIVE DISPLACEMENT CONDENSING UNITS



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IMPORTANT

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AHRI does not set safety standards and does not certify or guarantee the safety of any products, components or systems designed, tested, rated, installed or operated in accordance with this standard/guideline. It is strongly recommended that products be designed, constructed, assembled, installed and operated in accordance with nationally recognized safety standards and code requirements appropriate for products covered by this standard/guideline.

AHRI uses its best efforts to develop standards/guidelines employing state-of-the-art and accepted industry practices. AHRI does not certify or guarantee that any tests conducted under its standards/guidelines will be non-hazardous or free from risk.

Note:

This standard supersedes ARI Standard 520-97.

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PERFORMANCE RATING OF POSITIVE DISPLACEMENT CONDENSING UNITS

Section 1. Purpose

1.1 Purpose. The purpose of this standard is to establish, for positive displacement condensing units: definitions; test requirements; rating requirements; minimum data requirements for Published Ratings; operating requirements; 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 electric motor driven, single and variable capacity positive displacement condensing units for air-cooled, evaporatively-cooled, and water-cooled refrigeration applications.

2.1.1 Refrigerant. The rating points in this standard are based on commonly used refrigerants.

2.2 Exclusions.

2.2.1 This standard does not apply to condensing units intended for use in:

- a. Household refrigerators and freezers
- b. Automotive air-conditioners
- c. Dehumidifiers

Section 3. Definitions

All terms in this document follow the standard industry definitions in the current edition of *ASHRAE Terminology of Heating, Ventilation, Air Conditioning and Refrigeration* unless otherwise defined in this section.

3.1 Coefficient of Performance (COP). A ratio of the Cooling/Heating Capacity in watts [W] to the power input values in watts [W] at any given set of Rating Conditions expressed in watts/watt [W/W]. For heating *COP*, supplementary resistance heat shall be excluded.

3.1.1 Standard Coefficient of Performance. A ratio of the capacity to power input value obtained at Standard Rating Conditions.

3.2 Energy Efficiency Ratio, (EER). A ratio of the Cooling Capacity in Btu/h to the power input values in watts at any given set of Rating Conditions expressed in Btu/(W · h).

3.2.1 Standard Energy Efficiency Ratio. A ratio of the capacity to power input value obtained at Standard Rating Conditions.

3.3 Positive Displacement Condensing Unit. A specific combination of refrigeration system components for a given refrigerant, consisting of one or more electric motor driven positive displacement compressors, condensers, and accessories as provided by the manufacturer.