

1999 STANDARD for

CENTRAL STATION AIR- HANDLING UNITS



**ANSI/ARI
Standard 430-1999**

IMPORTANT

SAFETY RECOMMENDATIONS

It is strongly recommended that the product be designed, constructed, assembled and installed in accordance with nationally recognized safety requirements appropriate for products covered by this standard.

ARI, as a manufacturers' trade association, uses its best efforts to develop standards employing state-of-the-art and accepted industry practices. However, ARI does not certify or guarantee safety of any products, components or systems designed, tested, rated, installed or operated in accordance with these standards or that any tests conducted under its standards will be non-hazardous or free from risk.

ARI CERTIFICATION PROGRAM PROVISIONS

Scope of the Certification Program

The Certification Program includes all sizes of central station air-handling units as defined in Section 2.

Certified Ratings

The following Certification Program ratings are verified by test:

1. Fan Speed, rpm [rev/s]
2. Brake Horsepower, bhp [W]

Note:

This standard supersedes ARI Standard 430-99.

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CENTRAL STATION AIR-HANDLING UNITS

Section 1. Purpose

1.1 Purpose. The purpose of this standard is to establish for central station air-handling units: definitions; classifications; requirements for testing and rating; 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, engineers, 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 central station air-handling units, as defined in Section 3.

2.2 Exclusions.

2.2.1 This standard does not apply to forced-circulation, free-delivery air-coolers for refrigeration, which are covered in ARI Standard 420.

2.2.2 This standard does not apply to unit heaters intended for free delivery of heated air or to room fan-coil air-conditioners as defined in ARI Standard 440.

2.2.3 This standard does not apply to units having direct expansion coils which are incorporated by the manufacturer in a matched split system air-conditioner or as otherwise defined in the product scope definition of the ARI Unitary Small Equipment and Unitary Large Equipment Sections and covered in ARI Standard 210/240 or in ARI Standard 340/360.

2.2.4 This standard does not apply to unit ventilators as defined in ARI Standard 840.

2.2.5 This standard does not apply to ratings for plenum (plug) and axial fans.

Section 3. Definitions

3.1 Definitions. All terms in this document will 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.

3.2 Central Station Air-Handling Unit. A factory-made encased assembly consisting of a fan or fans and other necessary equipment to perform one or more of the functions of circulating, cleaning, heating, cooling, humidifying, dehumidifying and mixing of air; and shall not contain a source of cooling or heating other than gas or electric heat. This device is capable of use with duct work having a total static resistance of at least 0.5 in. H₂O [0.12 kPa].

3.2.1 Blow-Through Central Station Air-Handling Unit (see Figure 1). A unit containing a fan that does not have a ducted fan outlet.

3.2.2 Draw-Through Central Station Air-Handling Unit (see Figure 2). A unit that has a ducted fan outlet.

3.2.3 Fan. An impeller and any other items, such as housings and inlet vanes that are an integral part of the impeller and/or housing that affect the basic performance characteristics of the fan.

3.2.4 Unit Appurtenances. Equipment added for purposes of control, isolation, safety, static pressure regain, wear, etc. Such appurtenances include coils, filters, dampers, air-mixers, sprays, eliminators, etc.

3.3 Published Rating. A statement of the assigned values of those performance characteristics, under stated rating conditions, by which a unit may be chosen to fit its application. These values apply to all units of like nominal size and type (identification) produced by the same manufacturer. As used herein, the term "published rating" includes the rating of all performance characteristics shown on the unit or published in specifications, advertising or other literature controlled by the manufacturer at stated rating conditions.