

# ANSI/AHRI Standard 365 (I-P)

2009 Standard for

# Performance Rating of Commercial and Industrial Unitary Air-Conditioning Condensing Units



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## **IMPORTANT**

### ***SAFETY DISCLAIMER***

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 the standards/guidelines will not be non-hazardous or free from risk.

### **AHRI CERTIFICATION PROGRAM PROVISIONS**

#### **Scope of the Certification Program**

The Certification Program includes Commercial and Industrial Unitary Air-Conditioning Condensing Units rated at or above 135,000 Btu/h but below 250,000 Btu/h at the AHRI Standard Rating Conditions (Cooling).

#### **Certified Ratings**

The following Certification Program ratings are verified by test:

1. Single Number Rating Cooling Capacity, Btu/h
2. Single Number Rating Energy Efficiency Ratio, EER, Btu/(W·h)
3. Integrated Energy Efficiency Ratio, IEER (effective January 1, 2010) or Integrated Part-Load Value, (IPLV) (effective through December 31, 2009)

Conformance to the requirements of the Maximum Operating Conditions Tests (Section 8) is also verified by test.

Note:

This standard supersedes ARI Standard 365-2002.  
For SI ratings, see ANSI/AHRI Standard 366 (SI)-2009.

## TABLE OF CONTENTS

	PAGE
Section 1. Purpose .....	1
Section 2. Scope .....	1
Section 3. Definitions .....	1
Section 4. Classifications.....	2
Section 5. Test Requirements .....	2
Section 6. Rating Requirements .....	3
Section 7. Minimum Data Requirements for Published Ratings.....	8
Section 8. Operating Requirements .....	8
Section 9. Marking and Nameplate Data.....	9
Section 10. Conformance Conditions.....	9

## TABLES

Table 1. Classifications of Commercial and Industrial Air-Conditioning Condensing Units .....	2
Table 2. Standard Rating Conditions.....	3
Table 3. IEER Part-Load Rating Conditions .....	5

## APPENDICES

Appendix A. References - Normative .....	10
Appendix B. References - Informative.....	10
Appendix C. Method and Example of Calculating Integrated Part-Load Values (IPLV) – Normative .....	11

# PERFORMANCE RATING OF COMMERCIAL AND INDUSTRIAL UNITARY AIR-CONDITIONING CONDENSING UNITS

## Section 1. Purpose

**1.1 Purpose.** The purpose of this standard is to establish for Commercial and Industrial Unitary Air-Conditioning Condensing Units: definitions; classifications; 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, 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 factory-made Commercial and Industrial Unitary Air-Conditioning Condensing Units greater than or equal to 135,000 Btu/h as defined in Section 3.

**2.1.1 Energy Source.** This standard applies only to electrically-driven, mechanical compression-type condensing units.

**2.2 Exclusions.** This standard does not apply to the testing and rating of condensing units for refrigeration purposes, as defined in AHRI Standard 520.

## Section 3. Definitions

All terms in this document shall 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 Bubble Point.** Refrigerant liquid saturation temperature at a specified pressure.

**3.2 Commercial and Industrial Unitary Air-Conditioning Condensing Unit.** A factory-made assembly of refrigeration components designed to compress and liquefy a specific refrigerant. It consists of one or more refrigerant compressors, refrigerant condensers (air-cooled, evaporatively – cooled, and/or water-cooled), condenser fans and motors (where used) and factory-supplied accessories.

**3.3 Cooling Capacity.** The capacity in Btu/h obtained at specific conditions. It is equal to the increase in total enthalpy between the liquid refrigerant entering the expansion valve and superheated return gas multiplied by the mass flow rate of the refrigerant.

**3.4 Dew Point.** Refrigerant vapor saturation temperature at a specified pressure.

**3.5 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).

**3.6 Integrated Energy Efficiency Rating (IEER).** A single number part-load efficiency figure of merit calculated per the method described in this standard.

**3.7 Integrated Part-Load Value (IPLV).** A single number cooling part-load figure of merit calculated per the method described in Appendix C.