

OPERATIONS MANUAL

UNITARY LARGE EQUIPMENT CERTIFICATION PROGRAM



ULE OM – APRIL 2025

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PREFACE

The following manual outlines the procedures and policies of the Performance Certification Program for Unitary Large Equipment (ULE) operated by the Air-Conditioning, Heating, and Refrigeration Institute (AHRI). This manual is to be used in conjunction with the AHRI General Operations Manual (GOM) for AHRI Certification Programs. Where the AHRI GOM and this product-specific manual differ, this product-specific operations manual shall prevail.

The revision of this manual supersedes all previous revisions. The current edition of this manual, as well as the AHRI GOM, can be accessed through the AHRI website, www.ahrinet.org.

The ULE Certification Program by AHRI provides for independent verification of the Unitary Large Equipment manufacturers' stated equipment performance. Safety criteria are not within the scope of this program.

Participation in the program is voluntary. Any manufacturer, regardless of AHRI membership, may obtain approval of Program Ratings and use of the AHRI ULE Certification Mark hereinafter referred to as the "Mark". The Mark is the Participant's public representation that the ratings of randomly selected samples have been verified by an independent laboratory in accordance with test procedures prescribed by this operations manual. A Certification Agreement is executed between the manufacturer and AHRI specifying the conditions under which such Ratings and the Mark may be used. No manufacturer has the right to use Program Ratings or to state that their products have been tested in conformance with the procedures outlined in this Rating Procedure unless and until they have received written authority from AHRI to use the Mark as applied to the specific approved Program Ratings.

This Operations Manual has been prepared to assure that administration of the program is carried out in a uniform manner. It is an amplification of the Certification Agreement signed by licensees and AHRI. General information, procedural details, and copies of forms are included in the Operations Manual. Provisions of the Operations Manual may be amended as provided in the Certification Agreement.

This certification program complies with requirements of the ISO/IEC Standard 17065:2012, *Conformity assessment – Requirements for bodies certifying products, processes and services*.

Note:

This manual supersedes the Unitary Large Equipment Operations Manual, January 2024.

CERTIFICATION PROGRAMS OPERATIONS MANUAL FOR UNITARY LARGE EQUIPMENT

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1. Program Overview

1.1 Applicable Rating Standard. It is mandatory for program Participants to comply with the provisions of AHRI Standard 340/360-2022, *Performance Rating of Commercial and Industrial Unitary Air-conditioning and Heat Pump Equipment* with modifications outlined in Appendix D of this document or AHRI Standard 365-2024, *Commercial and Industrial Unitary Air-Conditioning Condensing Units* (Standard). A copy of the Standard is available for download from the AHRI website, www.ahrinet.org.

1.2 Product Definitions. All terms in this document shall follow the AHRI GOM and the Standard definitions unless otherwise defined in this section for Unitary Large Equipment.

1.2.1 Commercial Unitary Air Conditioner and Commercial Unitary Heat Pump. Any air-cooled, water-cooled, or evaporatively-cooled commercial package air conditioning and heating equipment that consists of one (1) or more factory-made assemblies that provide space conditioning.

1.2.1.1 Commercial Unitary Air Conditioning System. A Commercial Unitary Air Conditioner that contains one (1) or more factory-made assemblies, that normally include a cooling coil, an air moving device, a compressor(s) and condenser combination, and can include a heating function as well. Where such equipment is provided in more than one assembly, the separate assemblies shall be designed to be used together, and the requirements of rating outlined in the standard shall be based upon the use of matched assemblies.

1.2.1.2 Commercial Unitary Heat Pump System. A Commercial Unitary Heat Pump that contains one (1) or more factory-made assemblies, that normally include an indoor conditioning coil, an air moving device, compressor(s), and an outdoor coil(s), including means to provide a heating function and can include a cooling function. When such equipment is provided in more than one assembly, the separate assemblies shall be designed to be used together, and the requirements of rating outlined in the standard shall be based upon the use of matched assemblies.

1.2.1.3 Single Packaged System. Any Commercial Unitary Air Conditioning System or Commercial Unitary Heat Pump System that has the means for air circulation and heat removal, air cleaning, and the controls thereof, that are assembled or designed to be assembled within a single factory-made enclosure.

1.2.1.3.1 Single Packaged Air Conditioner. A Single Packaged System with factory-made assemblies of one or more evaporator fans, evaporator coils, and condensing sections having means for air cooling, cleaning, dehumidification, heating with factory or field installed electric strip heaters and forced air circulation through a duct system and that can have means for humidifying and control of temperature. These units do not have gas heat and are not heat pumps.

1.2.1.3.2 Year-Round Single Packaged Air Conditioner. A Single Packaged Air Conditioner that includes gas heating.

1.2.1.3.3 Single Packaged Heat Pump. A Single Packaged System that can both cool and heat with the refrigeration system that can have provision for supplementary electric, hot water, or steam heat that are factory-made assemblies of one or more evaporator fans, evaporator coils, and condensing sections having means for air cooling, heating, cleaning, dehumidification, and forced air circulation through a duct system and that can have means for humidifying and control of temperature, with provision for modifying the performance so that either heating or cooling and dehumidification can be produced.

1.2.1.3.4 Year-Round Single Packaged Heat Pump. A Single Packaged Heat Pump that includes gas heating (dual fuel).

1.2.1.4 *Split System*. Any Commercial Unitary Air Conditioning System or Commercial and Unitary Heat Pump System that has one or more of the major assemblies separated from the others.

1.2.1.4.1 *Indoor Unit*. A component of a split system that is designed to transfer heat between refrigerant and air and which consists of an indoor coil, an air movement device, and a temperature sensing control with the integrated controls for the matching Outdoor Unit. Other components of the split system, such as the compressor(s), may be included in the indoor unit.

1.2.1.4.2 *Outdoor Unit*. A component of a split system that is designed to transfer heat between refrigerant and air, or refrigerant and water, and which consists of an outdoor coil, compressor(s), and air moving device. For heat pumps, the outdoor unit additionally consists of a reversing valve and defrost controls and may contain refrigerant expansion device.

1.2.2 *Condensing Unit*. A factory-made assembly of refrigeration components designed to compress and liquefy a specific refrigerant. It consists of one (1) or more refrigerant compressors, refrigerant condensers (air-cooled, water-cooled, and/or evaporatively-cooled), condenser fans and motors (where used) and factory-supplied accessories.

1.3 *Program Scope*. This program applies to 50 Hz and 60 Hz Production Models of Unitary Large Equipment, as listed in Appendix A.

1.4 *Intended Market*. The Intended Market for this certification program includes all products defined in Section 1.3 that are sold for use in the U.S. (including U.S. Territories) and Canada. Production models sold for use outside of the Intended Market may be optionally certified. If the Participant does not wish to carry certification of a model sold for use outside the Intended Market, this product shall carry a separate and unique model number from an existing AHRI certified model number to avoid market confusion.

All production models sold for use in the Intended Market shall be certified in accordance with the AHRI Standard Rating Conditions specified in Section 6.1.3 of the Standard. 50 Hz and 60 Hz production models sold for use outside of the Intended Market, if certified, shall follow the requirements of Appendix B.

1.5 *Basic Model Groups (BMGs)*. A Participant's listings shall be grouped by BMG. A BMG is a grouping of models of similar performance with similar outdoor condenser and compressor characteristics. The required BMG divisions shall consist of the same:

- Condenser (Outdoor) Air Flow/Water Flow,
- Condenser (Outdoor) Finned Face Area,
- Compressor Nominal Performance,
 - *Compressor Performance*. To determine the applicable BMG, compressors with Total Refrigerating Capacities less than 250,000 Btu/h shall be rounded to the nearest 5,000 Btu/h and those above 250,000 Btu/h shall be rounded to the nearest 10,000 Btu/h. Total Refrigerating Capacity is determined using AHRI Standard 540-2020 at:
 - Reference rating condition: AC and HP, Cooling, Subcritical
 - Frequency – 60 Hz
- Compressor Type; and
- Compressor Motor Design.

1.5.1 *Optional Additional BMGs*. A participant may choose to further subdivide its products into additional BMGs using the following optional characteristics:

- Volts
- Hertz
- Number of Refrigeration Circuits
- Sold In
- Rating Conditions

1.5.2 Engineered-to-Order. A model may be designated as Engineered-to-Order on the AHRI Directory to help participants facilitate regulatory compliance with the Department of Energy. Engineered-to-Order products are considered custom units, are not AHRI Certified, are not visible on the public side of the Directory and shall not be assigned a BMG.

2. Qualification Process

2.1 Original Equipment Manufacturer (OEM) Applicants. With the additions noted below, the OEM qualification process shall proceed according to the AHRI GOM, Section 4.

STEP 2.1.1 Certification Application Package. In addition to the Application for AHRI Certification, New Applicant License Fee Form – Sales Volume, and product-specific ratings and data, noted in the AHRI General Operations Manual, Section 4, STEP 4.1, Applicants shall submit the following documentation to AHRI:

- One test report for each BMG; or when an AEDM is available, one test report for two separate BMGs plus a report generated using an AEDM for each additional BMG;
- An Applicant requesting AHRI to submit data to CEC, DOE, FTC, and NRCan shall submit third-party authorization, compliance forms and other necessary information.

Electronic forms shall be obtained from AHRI.

STEP 2.1.2 Processing Application Package.

STEP 2.1.2.1 Performance Certification Agreement for Original Equipment Manufacturer (OEM Agreement). No further action required beyond that listed in Section 4, STEP 4.2 of the AHRI GOM.

STEP 2.1.2.2 Participation and Licensing Fee Invoice. Payment of the Participation and Licensing Fee is due within 30 calendar days of the invoice issue date. Testing shall not be conducted until the invoice is paid in full. No further action required beyond that listed in Section 4, STEP 4.2 of the AHRI GOM.

STEP 2.1.3 Selection and Acquisition of Test Samples.

STEP 2.1.3.1 Number of Qualification Tests.

- For 65,000 Btu/h to less than 250,000 Btu/h. 30% of an Applicant's BMGs shall be tested, with a minimum of two (2) models. Fractional numbers shall be rounded to the nearest whole number using traditional rounding methods.
- For 250,000 Btu/h to less than 760,000 Btu/h. 20% of an Applicant's BMGs shall be tested, with a minimum of two (2) models. Fractional numbers shall be rounded to the nearest whole number using traditional rounding methods.

STEP 2.1.3.2 Acquisition of Qualification Test Samples/Selection Criteria.

- For 65,000 Btu/h to less than 250,000 Btu/h. Within 60 calendar days of a request from AHRI, the Applicant shall have samples available for selection.

- For 250,000 Btu/h to less than 760,000 Btu/h. Within 90 calendar days of a request from AHRI, the Applicant shall have samples available for selection.

Samples shall be acquired in accordance with Section 3 of this manual. All samples shall be provided with the equipment listed in Section 3.6 of this manual.

STEP 2.1.4 Qualification Testing. AHRI shall supply the Independent Third-party Laboratory Contracted by AHRI (Laboratory) with the Published Ratings. The Laboratory shall conduct the testing of the samples in accordance with the Standard, against the Published Ratings.

STEP 2.1.4.1 Operating Tests. In addition to the Performance Rating tests, the following Operating Tests shall be conducted for all qualification tests:

- Maximum Operating Conditions (MOC)
- Insulation Efficiency
- Low Temperature Operation
- Condensate Disposal

If any of these samples fail any of the Operating Tests, the second sample selected shall pass in order to qualify into the program. If the second sample does not pass, then that model and BMG shall not be entered into the AHRI Directory of Certified Product Performance (Directory) and the Applicant shall cease production and sale of the failed model and BMG in order to qualify into the certification program. A new model shall be selected and tested to continue the qualification process.

STEP 2.1.4.2 Successful Completion of All Qualification Tests. If all qualification tests pass proceed to STEP 2.1.5.

STEP 2.1.4.3 First Sample Qualification Test Failure. Refer to Section 4, STEP 4.4.2 of the AHRI GOM for details regarding the first sample qualification failure options.

STEP 2.1.4.4 Second Sample Qualification Test Failure. Refer to Section 4, STEP 4.4.3 of the AHRI GOM for details regarding the second sample qualification failure options.

STEP 2.1.5 Welcome to the Program. No further action required beyond that listed in Section 4, STEP 4.5 of the AHRI GOM.

2.2 Private Brand Marketer (PBM) Applicants. With the additions noted below, the PBM qualification process shall proceed according to the AHRI GOM, Section 5.

PBM Applicants are not required to undergo qualification testing. PBM product certification is contingent upon the certification of the associated OEM product.

STEP 2.2.1 Certification Application Package. No further action required beyond that listed in Section 5, STEP 5.1 of the AHRI GOM.

STEP 2.2.2 Processing Application Package.

STEP 2.2.2.1 Performance Certification Agreement for Private Brand Marketer (PBM Agreement). No further action required beyond that listed in Section 5, STEP 5.2.1 of the AHRI GOM.

STEP 2.2.2.2 OEM Agreement on Behalf of the PBM Applicant. No further action required beyond that listed in Section 5, STEP 5.2.2 of the AHRI GOM.

STEP 2.2.2.3 Licensing Fee Invoice. Payment of the Licensing Fee is due within 30 calendar days of the invoice issue date.

STEP 2.2.3 Welcome to the Program. No further action required beyond that listed in Section 5, STEP 5.3 of the AHRI GOM.

3. Equipment Selection and Testing

3.1 Annual Testing Requirement.

- For 65,000 Btu/h to less than 250,000 Btu/h. 20% of a Participant's BMGs, shall be tested annually, with a minimum of one (1) model. Fractional numbers shall be rounded to the nearest whole number using traditional rounding methods.
- For 250,000 Btu/h to less than 760,000 Btu/h. 20% of a Participant's BMGs, shall be tested annually, with a minimum of one (1) model. Fractional numbers shall be rounded to the nearest whole number using traditional rounding methods.
- International Annual Testing Requirements are listed in Appendix B.

3.2 Location of Tests. Testing shall be performed at the Laboratory and the sample shall be installed in the test facility in accordance with the Participant's published installation instructions in printed or electronic format.

3.2.1 Laboratory Qualification. The Laboratory shall evaluate all test stands that will be used to conduct testing for this program in accordance with AHRI Standard 140, Evaluation of Air-Conditioning and Heating Equipment Test Stands.

3.2.2 Witness Testing. Production models sold exclusively outside of the Intended Market may be tested at a Participant's AHRI Approved Test Stand (Test Stand) in accordance with the procedures and requirements in Appendix E. The Test Stand shall be approved by AHRI prior to any test being conducted.

3.3 Selection of Test Samples. Selections shall be made based on data contained in the Directory. AHRI shall inform the Participant, in writing, of the sample(s) selected for test.

3.3.1 Quarterly Loading. Participants shall deliver their samples to the Laboratory on a quarterly basis, spread out over the first three (3) quarters of a calendar year. AHRI shall notify the Participant, in writing, of the number and type of samples that must be delivered per quarter to the Laboratory.

3.3.2 Shared Testing with Commercial Furnaces (CFRN). If a manufacturer is a Participant in both the CFRN certification program and the ULE certification program, the Participant may share test samples between the two programs in the same test year. In annual selection letters, AHRI shall inform the participant of selected ULE samples. Within seven (7) calendar days, the Participant shall identify the AHRI certified reference numbers for the CFRN models compatible with each ULE selection. Shared samples will be selected using the process found in Section 3.4.

3.4 Method of Acquiring Test Samples. AHRI or the Laboratory shall make a Random Sample Selection or Random Component Selection. Selected samples shall be sealed and shipped to the laboratory accompanied by the Participants' published installation instructions in printed or electronic format. Refer to Section 9 of the AHRI GOM.

3.4.1 Random Component Selection. The selection shall be comprised of a minimum set of three (3) serial numbers for each compressor model number. Selection pool requirements are provided in Table 1. Selection pool requirements may be extrapolated using Table 1.

Table 1. Selection Pool for Random Component Selection		
Total Number of Compressors	Number of Distinct Compressors	Minimum Selection Pool
4	2	8
4	1	6
3	2	7
3	1	5
2	2	6
2	1	4
1	1	3

3.5 Sample Acquisition Timeframe. The Participant shall either deliver its first quarter set of selected sample(s) to the Laboratory within the first quarter selection deadline, or shall have samples ready for selection within 60 calendar days of notification of selections from AHRI for units from 65,000 Btu/h to less than 250,000 Btu/h, and within 90 calendar days for units from 250,000 Btu/h to less than 760,000 Btu/h, whichever deadline comes first. The participant shall provide samples per the deadlines set by AHRI per Section 3.3.1.

The Participant shall deliver the selected sample(s) to the Laboratory within 14 calendar days of Random Sample Selection or Random Component Selection. Failure to deliver the sample within the specified timeframe shall be grounds for a program violation.

3.6 Required Equipment Provisions. The Participant shall provide a complete system and a punch list (see Appendix C) to the Laboratory. The Participant is responsible for shipping all necessary equipment and parts to the Laboratory to ensure that the sample functions properly and test(s) can be performed in accordance with the Standard.

3.7 Break-in Operation and Start-Up of Test Units. The Participant may instruct the Laboratory to operate the equipment for a specified number of “break-in” hours prior to testing, not to exceed:

- 20 hours inside the test chamber at conditions specified by the Participant, or;
- 20 hours outside the test chamber (Air-Cooled Single Packaged Unitary Air-Conditioners only).

The Participant is required to pay all break-in costs directly to the Laboratory.

3.8 Contact List for Testing Support. Within 14 calendar days of the original selection by AHRI, the Participant shall provide a contact list for testing support to AHRI and the Laboratory, using the punch list in Appendix C. The Participant is responsible for notifying AHRI and the Laboratory of any changes to the contact list that occur during a testing year.

3.9 Certified Data. In accordance with the Standard, the following certified ratings are verified by test:

3.9.1 Air-Cooled and Water-Cooled Unitary Air-Conditioners from 65,000 Btu/h to less than 250,000 Btu/h

- Standard Rating Cooling Capacity, Btu/h;
- Energy Efficiency Ratio (EER), Btu/W·h; and
- Integrated Energy Efficiency Ratio (IEER), Btu/W·h.

3.9.2 Air-Cooled Unitary Heat Pumps from 65,000 Btu/h to less than 250,000 Btu/h:

- Standard Rating Cooling Capacity, Btu/h;
- Energy Efficiency Ratio (EER), Btu/W·h;

- High Temperature Heating Standard Rating Capacity, Btu/h;
- High Temperature Coefficient of Performance (COP 47°F);
- Low Temperature Heating Standard Rating Capacity, Btu/h;
- Low Temperature Coefficient of Performance (COP 17°F); and
- Integrated Energy Efficiency Ratio (IEER), Btu/W·h.

3.9.3 Air-Cooled Air-Conditioning Condensing Units from 135,000 Btu/h to less than 250,000 Btu/h:

- Standard Rating Cooling Capacity, Btu/h;
- Energy Efficiency Ratio (EER), Btu/W·h; and
- Integrated Energy Efficiency Ratio (IEER), Btu/W·h.

3.9.4 Air-Cooled Single Packaged Unitary Air-Conditioners from 250,000 Btu/h to less than 760,000 Btu/h:

- Standard Rating Cooling Capacity, Btu/h;
- Energy Efficiency Ratio (EER), Btu/W·h; and
- Integrated Energy Efficiency Ratio (IEER), Btu/W·h.

3.9.5 Air-Cooled Single Packaged Unitary Heat Pumps from 250,000 Btu/h to less than 760,000 Btu/h

- Standard Rating Cooling Capacity, Btu/h;
- Energy Efficiency Ratio (EER), Btu/W·h;
- High Temperature Heating Standard Rating Capacity, Btu/h;
- High Temperature Coefficient of Performance (COP 47°F);
- Low Temperature Heating Standard Rating Capacity, Btu/h;
- Low Temperature Coefficient of Performance (COP 17°F); and
- Integrated Energy Efficiency Ratio (IEER), Btu/W·h.

3.9.6 International Certified Data

- Listed in Appendix B

3.10 Voltage. Standard Rating tests shall be conducted using the nameplate rated voltage and frequency specified in the Standard. For equipment with dual nameplate ratings, tests shall be performed at both voltages or at the lower of the two if only a single Standard Rating is published.

3.11 Additional Tests during First Year of Program Participation. For a Participant in its first year of the program, the following additional tests shall be conducted for each selected sample at the expense of the Participant:

- Maximum Operating Conditions (MOC)
- Insulation Efficiency
- Low Temperature Operation
- Condensate Disposal

If a sample fails any of these tests, the second sample selected shall pass in order to keep the BMG unaffected. If the second sample does not pass these tests, then the Participant shall stop all sales and marketing of that model and BMG and that BMG shall be removed from the Directory.

3.12 Test Failures.

3.12.1 Options Following 1st Sample Failure. When the Participant is notified of a first sample certified rating failure, the Participant has seven (7) calendar days to select one of the following options:

- Re-rate only the failed metric(s) for all models within the failed sample's BMG proportionate to the failed test's results;
- Test second sample of the same model (sample must be available within the timeframe and procedure allotted in Section 3.4 following notification of decision to AHRI via Manufacturer's Decision Form [MDF]); or
- Obsolete the model, which also obsoletes all models within the corresponding BMG.

3.12.2 Options Following 2nd Sample Failure. When the Participant is notified of a second sample certified rating failure, the Participant has seven (7) calendar days to select one of the following options:

- Re-rate only the failed metric(s) for all models within the failed sample's BMG proportionate to the failed test's results; or
- Obsolete the model, which also obsoletes all models within the corresponding BMG.

3.13 Energy Policy Act (EPACT) Re-rating Requirements. US Energy Policy Act (EPACT) units are commercial equipment covered under 42 U.S. Code § 6313, that are sold in the U.S. Market.

- In the event of a re-rate, those models re-rated at less than the EPACT minimum efficiencies shall be obsoleted and listed on the Directory with the appropriate "WAS" ratings.
- Any such model may be tested to determine its pass/fail status at the expense of the Participant.

4. Challenge Tests

Refer to Section 10 of the AHRI GOM.

5. AHRI Directory of Certified Product Performance

All certified products shall be listed in the Directory, www.ahridirectory.org. Certification shall not be implied nor claimed for any product not listed in the Directory. Except as noted below, the Participant shall follow the steps outlined in Section 11 of the AHRI GOM.

5.1 Publication of Ratings in Certified Directory. The following information pertaining to each model certified shall be published in the Directory. For models rated to international rating conditions refer to Appendix B.

- AHRI Certified Reference Number
- Brand Name
- Series Name
- Model Number
- Indoor Unit Model Number
- Cooling Capacity 95°F, Btu/h
- Energy Efficiency Ratio (EER) 95°F, Btu/W·h
- Heating Capacity 47°F, Btu/h
- Coefficient of Performance (COP) 47°F
- Heating Capacity 17°F, Btu/h
- Coefficient of Performance (COP) 17°F
- Integrated Energy Efficiency Ratio (IEER)
- Full Load Indoor Coil Air Quantity, SCFM
- Model Status
- AHRI Type
- Frequency (Hertz)
- Refrigerant Type
- Sold In?

5.2 Data Forms. Each Participant shall list its products by BMG. OEM and PBM Participants shall submit/edit product data via the Directory.

6. Assessment and Payment of Certification Fees

Refer to Section 12 of the AHRI General OM.

7. Issuance of Violations and/or Termination

Refer to Section 14 of the AHRI General OM.

8. Program Hierarchy, Complaints, and the Appeals Process

Refer to Section 15 of the AHRI General OM.

9. Proper Use of the AHRI Certification Mark and Claims to Certification

Refer to the Section 8 of the AHRI General OM.

APPENDIX A

TYPES OF UNITARY LARGE EQUIPMENT

Table A1. Commercial and Industrial Air-Conditioning Equipment Certification

Designation	AHRI Type	Rating Standard	Certified Capacity Range
Single Package, Air-Cooled	SP-A ²	AHRI-340/360	≥65,000 Btu/h and <760,000 Btu/h
Single Package, Water-Cooled	SP-W	AHRI-340/360	≥65,000 Btu/h and <250,000 Btu/h
Single Package, Evaporatively-Cooled	SP-E ²	AHRI-340/360	Not Certified
Year Round Single Package, Air-Cooled	SPY-A ²	AHRI-340/360	≥65,000 Btu/h and <760,000 Btu/h
Year Round Single Package, Water-Cooled	SPY-W	AHRI-340/360	Not Certified
Year Round Single Package, Evaporatively-Cooled	SPY-E ²	AHRI-340/360	Not Certified
Split System Condensing Unit, Coil and Blower, Air-Cooled	RCU-A-CB ²	AHRI-340/360	≥65,000 Btu/h and <250,000 Btu/h as a system ¹
Split System Condensing Unit, Coil and Blower, Water-Cooled	RCU-W-CB	AHRI-340/360	Not Certified
Split System Condensing Unit, Coil and Blower, Evaporatively-Cooled	RCU-E-CB ²	AHRI-340/360	Not Certified
Year Round Split System Condensing Unit, Coil and Blower, Air-Cooled	RCUY-A-CB ²	AHRI-340/360	≥65,000 Btu/h and <250,000 Btu/h as a system ¹
Year Round Split System Condensing Unit, Coil and Blower, Water-Cooled	RCUY-W-CB	AHRI-340/360	Not Certified
Year Round Split System Condensing Unit, Coil and Blower, Evaporatively-Cooled	RCUY-E-CB ²	AHRI-340/360	Not Certified
Remote Condenser, Air-Cooled	RC-A ²	AHRI-340/360	≥65,000 Btu/h and <250,000 Btu/h as a system
Remote Condenser, Water-Cooled	RC-W	AHRI-340/360	Not Certified
Remote Condenser, Evaporatively-Cooled	RC-E ²	AHRI-340/360	Not Certified
Split System Condensing Unit, Coil Alone, Air-Cooled	RCU-A-C ²	AHRI-340/360	≥65,000 Btu/h and <250,000 Btu/h as a system
Split System Condensing Unit, Coil Alone, Water-Cooled	RCU-W-C	AHRI-340/360	Not Certified
Split System Condensing Unit, Coil Alone, Evaporatively-Cooled	RCU-E-C ²	AHRI-340/360	Not Certified
Year Round Remote Condenser, Air-Cooled	RCY-A	AHRI-340/360	Not Certified
Year Round Remote Condenser, Water-Cooled	RCY-W	AHRI-340/360	Not Certified
Year Round Remote Condenser, Evaporatively-Cooled	RCY-E	AHRI-340/360	Not Certified
Remote Condensing Unit, Air-Cooled	RCU-A	AHRI 365	≥135,000 Btu/h and <250,000 Btu/h as a system ¹
Remote Condensing Unit, Water-Cooled	RCU-W	AHRI-365	Not Certified
Remote Condensing Unit, Evaporatively-Cooled	RCU-E	AHRI-365	Not Certified
Notes: <ol style="list-style-type: none"> 1. Remote condensing units below 135,000 Btu/h must be certified as a system to AHRI Standard 340/360 and optionally can be certified as a system ≥135,000 Btu/h and <250,000 Btu/h or as a condensing unit only ≥135,000 Btu/h and <250,000 Btu/h. 2. For double-duct systems, append “-DD”, and outdoor arrangement moves from outdoor side to indoor side. 			

Table A2. Commercial and Industrial Air-Conditioning Heat Pump Equipment Certification

Designation	AHRI Type		Rating Standard	Cooling Capacity Range
	Heating and Cooling	Heating Only		
Single Package, Air-Cooled	HSP-A ¹	HOSP-A ¹	AHRI-340/360	≥65,000 Btu/h and <760,000 Btu/h
Year Round Single Package, Air-Cooled	HSPY-A	HOSPY-A	AHRI-340/360	≥65,000 Btu/h and <760,000 Btu/h
Remote Outdoor Coil	HRC-A-CB ¹	HORC-A-CB ¹	AHRI-340/360	Not Certified
Split System Remote Outdoor Coil with No Indoor Fan	HRC-A-C ¹	HORC-A-C ¹	AHRI-340/360	Not Certified
Split System with Coil Blower	HRCU-A-CB ¹	HORCU-A-CB ¹	AHRI-340/360	≥65,000 Btu/h and <250,000 Btu/h
Split System with no Indoor Fan	HRCU-A-C ¹	HORCU-A-C ¹	AHRI-340/360	≥65,000 Btu/h and <250,000 Btu/h
Notes:				
1. For double-duct systems, append "-DD", and outdoor arrangement moves from outdoor side to indoor side.				

APPENDIX B

CERTIFICATION OF MODELS RATED WITH INTERNATIONAL RATING CONDITIONS

Models rated with International Rating Conditions shall be certified using ULE OM and the GOM, with the following exceptions:

- B1. Basic Model Groups (BMGs). See Section 1.5.
- B1.1 Optional Additional BMGs. See Section 1.5.1.
- B2. Annual Testing Requirements.
- B2.1 For 65,000 Btu/h to less than 250,000 Btu/h. 20% of a Participant's BMGs certified to International Rating Conditions, shall be tested annually, with a minimum of one (1) model. Fractional numbers shall be rounded to the nearest whole number using traditional rounding methods.
- B2.2 For 250,000 Btu/h to less than 760,000 Btu/h. 20% of a Participant's BMGs certified to International Rating Conditions, shall be tested annually, with a minimum of one (1) model. Fractional numbers shall be rounded to the nearest whole number using traditional rounding methods.
- B2.3 BMG Models with both AHRI Standard Ratings and International Ratings. BMGs that have certified ratings for both AHRI Standard and International Rating Conditions shall be counted only once, under BMGs with AHRI Standard Rating Conditions.
- B3. Certified Data. In accordance with the Standard, the following certified ratings are verified by test:
- B3.1 Certified Data at International Rating Conditions. The participant shall certify the performance rating at one or more of the international rating conditions, as specified in Table B1. The participant may further choose to certify additional operating conditions specified in Table B3. Certification tests shall be conducted at all conditions at which the participant certifies the equipment.
- B3.1.1 Air-Cooled and Water-Cooled Unitary Air-Conditioners from 65,000 Btu/h [19,000 W] to less than 250,000 Btu/h [73,200 W]
- Cooling Capacity at T1, T2, and/or T3, Btu/h¹;
 - Energy Efficiency Ratio (EER_{T1}, EER_{T2}, EER_{T3}) T1, T2, and/or T3, Btu/W·h, and Coefficient of Performance (COP_{T1}, COP_{T2}, COP_{T3}) at T1, T2, and/or T3, W/W¹; and
 - Extra High Temperature Operating Requirement¹.
- Notes
1. As required by B3.1
- B3.1.2 Air-Cooled Unitary Heat Pumps from 65,000 Btu/h [19,000 W] to less than 250,000 Btu/h [73,200 W]
- Cooling Capacity at T1, T2, and/or T3, Btu/h¹;
 - Energy Efficiency Ratio (T1, T2, and/or T3, Btu/W·h, and Coefficient of Performance (COP_{T1}, COP_{T2}, COP_{T3}) at T1, T2, and/or T3, W/W¹;
 - Heating Capacity at H1, H2, and/or H3, Btu/h¹;
 - Coefficient of Performance (COP_{H1}, COP_{H2}, COP_{H3}) at H1, H2, and/or H3; as applicable; and
 - Extra High Temperature Operating Requirement¹.

Notes

1. As required by B3.1

B3.1.3 Air-Cooled Single Packaged Unitary Air-Conditioners from 250,000 Btu/h [73,200 W] to less than 760,000 Btu/h [220,000 W]:

- Cooling Capacity at T1, T2, and/or T3, Btu/h¹;
- Energy Efficiency Ratio (EER_{T1}, EER_{T2}, EER_{T3}) T1, T2, and/or T3, Btu/W·h, and Coefficient of Performance (COP_{T1}, COP_{T2}, COP_{T3}) at T1, T2, and/or T3, W/W¹; and
- Extra High Temperature Operating Requirement¹.

Notes

1. As required by B3.1

B4. Certification Requirements. Unitary Large Air-Conditioners and Heat Pumps Production models sold for use outside the Intended Market are eligible for AHRI certification at International Rating Conditions and shall be rated at one or more of the conditions shown in Table B1. Certification tests shall follow all the conditions specified in the applicable rating standard, except for the requirements specified in Section B.1, B.2, and B.3. Certification tests shall be conducted at all conditions at which the participant certifies the equipment.

Table B1. International Standard Rating Conditions (for I-P Standards)			
Cooling – Temperature Conditions	T1 (Moderate Climates)	T2 (Cool Climates)	T3 (Hot Climates)
Indoor	80.6°F DB ¹ & 66.2°F WB ²	69.8°F DB & 59.0°F WB	84.2°F DB & 66.2°F WB
Outdoor	95.0°F DB & 75.2°F WB	80.6°F DB & 66.2°F WB	114.8°F DB & 75.2°F WB
Heating – Temperature Conditions	H1 (Warm Climates)	H2 (Moderate Climates)	H3 (Cold Climates)
Indoor	68.0°F DB and 59.0°F WB max	68.0°F DB & 59.0°F WB max	68.0°F DB and 59.0°F WB max
Outdoor	44.6°F DB and 42.8°F WB	35.6°F DB & 33.8°F WB	19.4°F DB & 17.6°F WB
Notes: 1. DB = dry-bulb 2. WB = wet-bulb			

B4.1 External Static Pressure. The External Static Pressure shall be adjusted using Table B2.

B4.2 Airflow. The unit shall run at the rated airflow at the respective International Rating Condition temperature, specified by the manufacturer. Airflow shall be adjusted in accordance to Section 6, of the Applicable Rating Standard. The airflow shall be adjusted within ± 3% of the rated airflow.

B4.3 Certified Metrics. Production models sold for use outside of the Intended Market may be optionally certified to the following metrics, as shown in Table B3, at the respective rating conditions.

Table B2. External Static Pressure for International Rating Condition Tests	
Rated Cooling Capacity, Btu/h·1000 ¹	Minimum External Static Pressure (in. H ₂ O) ^{2,3}
65 ≤ 68	0.20
69 ≤ 102	0.25
103 ≤ 154	0.30
155 ≤ 280	0.40
281 ≤ 399	0.50
400 ≤ 502	0.60
≥ 503	0.70
¹ Rated full load Cooling Capacity for units with cooling function; high temperature Heating Capacity for heating-only units. ² The tolerance for external static pressure (averaged during the run time) for all equipment is -0 in. H ₂ O and +0.05 in. H ₂ O ³ Standard ratings shall be determined and tested with manufacturer standard, lowest level of air filtration. For units with no filters, static pressure allowance of 0.08 in. H ₂ O shall be added to the external static pressure. If higher filtration is offered then the unit shall be tested without filters, at an additional 0.08 in. H ₂ O external static pressure.	

Table B3. Certification Metrics	
Metric	Rating Condition
Cooling Capacity	T1, T2, T3
EER (COP)	T1, T2, T3
Heating Capacity	H1, H2, H3
COP	H1, H2, H3

B4.4 *Cooling Temperature Conditions.* The international T1, T2, and T3 temperature conditions specified in Table B1 shall be considered Standard Rating Conditions for the determination of Cooling Capacity and energy efficiency.

B4.5 *Heating Temperature Conditions.* The international H1, H2, and H3 temperature conditions specified in Table B1 shall be considered Standard Rating Conditions for the determination of Heating Capacity.

B4.6 *Optional Operating Requirements.* Participant may choose to optionally certify equipment to the conditions for the operating tests specified in Table B4. The requirements of the optional operating condition tests are specified below.

B4.6.1 *Extra High Temperature Operating Requirement.* Unitary Air-Cooled Air-Conditioners and Heat Pump Equipment shall pass the following extra high temperature operating condition test with an indoor-coil at the T3 condition airflow rate as determined under Section 6, AHRI Standard 340/360.

B4.6.1.1 *Temperature Conditions.* Temperature conditions shall be maintained as shown in Table B3 ± 1.0°F [0.6°C].

B4.6.1.2 *Voltages.* Tests shall be run at the unit's rated voltage.

B4.6.1.3 *Procedure.* Unitary Air-Cooled Air-Conditioners and Heat Pump Equipment shall operate continuously at full capacity for 2 hours at the temperature conditions and voltage(s) specified.

B4.6.1.4 Requirements. During the test, the equipment shall operate without failure of any of its components.

Table B4. Conditions for Operating Requirement Tests for Air-cooled Equipment				
TEST	INDOOR SECTION		OUTDOOR SECTION	
	Air Entering Temperature			
	Dry-Bulb	Wet-Bulb	Dry-Bulb	Wet-Bulb
Extra High Temperature Operating Conditions	80.0°F [26.7°C]	67.0°F [19.4°C]	125.6°F [52.0°C]	87.8°F ¹ [31.0°C]
Note: 1. The wet-bulb temperature condition is not required when testing air-cooled condensers which do not evaporate condensate.				

B5. Options Following International Rating Condition Optional Operating Requirement Test Failure. If the Participant's model does not comply with an Optional Operating Requirement test (see Appendix B), the model shall no longer be listed as compliant to the Optional Operating Requirement on the AHRI Directory and AHRI Certificate.

Failure of Optional Operating Requirement test shall not count towards the participant's standing in the certification program.

B5.1 Options Following 1st Sample Failure

- Accept non-compliance, the model shall no longer be listed as compliant to the Optional Operating Requirement on the AHRI Directory and AHRI Certificate; or
- Test second sample of the same model (sample must be available within the timeframe and procedure allotted in Section 3.4 following notification of decision; or
- Obsolete the model, which also obsoletes all models within the corresponding BMG. This option also accepts non-compliance.

B5.2 Options Following 2nd Sample Failure

- Accept non-compliance, the model shall no longer be listed as compliant to the Optional Operating Requirement on the AHRI Directory and AHRI Certificate; or
- Obsolete the model, which also obsoletes all models within the corresponding BMG. This option also accepts non-compliance.

B6. Publication of Ratings at International Rating Conditions in Certified Directory. The following information pertaining to each model certified shall be published in the Directory:

- AHRI Certified Reference Number;
- Model Status;
- Name of Manufacturer;
- Brand Name;
- Series Name;
- Model Number(s) or Designation(s);
- AHRI Type;
- Refrigerant;
- Standard Rating Cooling Capacity at T1 (CoolingCapacity_{T1}), Btu/h (W)¹;
- Standard Rating Cooling Capacity at T2 (CoolingCapacity_{T2}), Btu/h (W)¹;
- Standard Rating Cooling Capacity at T3 (CoolingCapacity_{T3}), Btu/h (W)¹;
- Energy Efficiency Ratio at T1 (EER_{T1}), Btu/W·h and Co-efficient of Performance at T1 (COP_{T1})¹;

- Energy Efficiency Ratio at T2 (EER_{T2}), Btu/W·h and Co-efficient of Performance at T2 (COP_{T2})¹;
- Energy Efficiency Ratio at T3 (EER_{T3}), Btu/W·h and Co-efficient of Performance at T3 (COP_{T3})¹;
- Standard Rating Heating Capacity at H1 ($HeatingCapacity_{H1}$), Btu/h (W)¹;
- Standard Rating Heating Capacity at H2 ($HeatingCapacity_{H2}$), Btu/h (W)¹;
- Standard Rating Heating Capacity at H3 ($HeatingCapacity_{H3}$), Btu/h (W)¹;
- Coefficient of Performance (COP_{H1}) at H1¹;
- Coefficient of Performance (COP_{H2}) at H2¹;
- Coefficient of Performance (COP_{H3}) at H3¹;
- Extra High Temperature Operating Requirement;
- Rated Full Load Indoor Coil Air Quantity at T1, SCFM¹;
- Rated Full Load Indoor Coil Air Quantity at T2, SCFM¹;
- Rated Full Load Indoor Coil Air Quantity at T3, SCFM¹;
- Rated Full Load Indoor Coil Air Quantity at H1, SCFM¹;
- Rated Full Load Indoor Coil Air Quantity at H2, SCFM¹;
- Rated Full Load Indoor Coil Air Quantity at H3, SCFM¹; and
- Frequency (Hertz)

Notes

1. As required by B3.1

APPENDIX C

AHRI UNITARY LARGE AIR (ULE) CERTIFICATION PROGRAM TEST - PUNCH LIST

The ULE Punch List can be downloaded at www.ahrinet.org

APPENDIX D

WITNESS TESTING

D1. Witness Testing Procedures and Operations. For production models sold exclusively outside of the Intended Market, this Certification Program allows witness testing, where Participant personnel witnessed by the Representative conducts testing at a Facility. Witness testing requirements are covered in the AHRI GOM, Section 9.12 and as specified below.

D1.1 Application for Witness Testing. A Participant shall submit all of the following to AHRI. Electronic forms shall be obtained from AHRI. (available on www.ahrinet.org under the Product-Specific Certification Program):

- Form ULE-WT1, Application for Witness Testing;
- Form ULE-WT2, Personnel Experience Questionnaire;
- Form ULE-WT3, Facility and Equipment Questionnaire;
- Test Stand Specifications in accordance with Table 3 of AHRI 140;
- Test report(s) and data for all test types required by Table 1 of AHRI 140;
- Reports shall include photographs of all test setups
- A complete list of all instruments and equipment being used to perform certification testing in accordance with the Standard and a copy of each calibration report showing date of last calibration;
- A schematic drawing of the area of the test facility in which AHRI certification testing shall be performed; and
- Photographs of the test facility in which AHRI certification testing shall take place, which shall include sufficient views to show the location and connection of each instrument.

D1.2 Inspection of Witness Test Facility. Following preliminary test facility approval based on submitted data, the Representative shall inspect the facility to verify compliance to the data submitted and to the certification program. Testing may be scheduled simultaneously with facility inspection; however, should the facility fail inspection, the testing shall be delayed until the facility is brought into compliance. The Representative shall complete applicable portions of Form ULE-WT3.

D1.2.1 Non-Compliant Inspection Results. If the results of the inspection indicate that a Facility is non-compliant with the certification program, all discrepancies shall be resolved and resubmitted to AHRI, before approval can be granted to proceed with certified rating tests.

D1.2.2 Final Approval of Witness Test Facility. Upon acceptable results of the inspection, AHRI shall notify the Facility of final acceptance and approval to proceed with certified rating tests. AHRI shall provide the Facility with a certificate of approval that shall be displayed in the Facility.

D1.3 Scheduled Witness Test Facility Re-approval. The Facility shall remain approved for no more than two (2) years, at which time, re-approval shall be required, including submittal of the documents outlined in Section D1.1 and inspection outlined in Section D1.2.

D1.4 Unscheduled Facility Re-approval. Any changes that may affect a Facility's ability to function per the certification program requirements shall be required to be re-approved by Laboratory personnel prior to conducting of any witness testing. At this time, re-approval shall be required, including submittal of the documents outlined in Section D1.1 and inspection outlined in Section D1.2.

D1.5 Witness Test Operations at a Facility.

D1.5.1 Advance Set-Up of Sample in the Facility. A Participant may set up the test sample in the Facility prior to the arrival of the Representative. Prior to test commencement, the Representative shall verify that the sample is the model selected by AHRI for testing and that the sample has been set up in the Facility in accordance with the Participant's installation instructions and referenced method of test.

D1.5.2 Duty Assignments of Laboratory Representative. Sample testing, data acquisition, and data reduction shall be performed by the Participant personnel and assisted and witnessed by the Representative. Participant or Facility personnel shall be on-hand to assist the Representative as requested and are permitted to be present but are not permitted to tamper or adjust samples during tests, unless specifically approved by the Representative responsible for the test.

Verification of instrument application (in accordance with the procedures defined in the Standard) and verification of calibrations shall be performed by the Representative.

D1.5.3 Use of Laboratory Instrumentation. The Representative shall use primary test instruments belonging to the Laboratory in line with those provided by the Participant to measure:

- Entering and leaving Wb and Db temperature (Participant to provide provision to measure leaving air temperature)
- Nozzle delta pressure (at Participant's flow nozzle with knowledge of nozzle geometry to calculate CFM)
- Duct external static pressure (in supply air duct)
- Barometric Pressure
- Power

Readings shall be taken from both devices. The readings from the Participant data acquisition system shall be used provided that:

- The Participant equipment is under current calibration;
- All data acquisition is in accordance with the Standard;
- All air temperatures including indoor and outdoor (Wb and Db) as well as nozzle air shall not differ by more than 0.4°F;
- Nozzle delta pressure shall not differ by more than 0.03 in. H₂O;
- Duct external static pressures shall not differ by more than 0.03 in. H₂O;
- Power input shall not differ more than 2.0% of the Participant's reading; and
- Barometric pressure shall not differ by more than 0.4% of the Participant's reading.

The Representative shall verify that the Facility test conditions remain within the allowable tolerances for the duration of the test period. This shall be done by comparing arithmetic mean values for each Participant measurement against the corresponding arithmetic mean values for each Laboratory measurement. Arithmetic mean values shall be calculated across the entire test period.

The Representative shall verify that the test duration does not vary by more than 10 seconds for start and stop times.

Should any of these criteria not be met, steps should be taken to ensure that the discrepancy is resolved. In cases where the discrepancy cannot be resolved and no damage is apparent, the Laboratory instrumentation data for that parameter shall be used.

D1.5.4 Air Flow Measurement Apparatus Check. Prior to testing, the air flow measurement apparatus is functioning properly using the following procedure:

- The Facility shall be operated, in accordance with the Standard, at the test sample rated air flow rate ($\pm 30\%$) and external static pressure (± 0.02 in.H₂O), over a 10-minute period, using both the smallest and largest available nozzle size combinations at the same flow rate. This will produce two flow rate measurements (each averaged over separate 10-minute periods).
- Both measurements shall be within 1% of the average of the two measurements to approve use of the air flow measurement apparatus.
- If both measurements are not within 1% of the average of the two measurements, steps should be taken to ensure that the discrepancy is resolved. In cases where the discrepancy cannot be resolved AHRI will review and determine appropriate action.

Prior to and after testing, the entire airflow measurement apparatus duct system shall be visually inspected for leaks. If leaks are discovered the leaks shall be corrected and the unit shall be retested.

D1.5.5 Sample Start-Up and Operation. Start-up and operation of the sample shall be in accordance with the Participant's published installation instructions in printed or electronic format.

D2. Test Stand Availability Requirements.

D2.1 Purpose. To promote participation in and the integrity of this Program, Participants shall make available test stands for Participants not having the ability to test products which they wish AHRI to certify.

D2.2 Definitions.

D2.2.1 Test Stand Provider. A Participant who is allowing the use of their test facility by another Participant for certification testing.

D2.2.2 Test Stand User. A Participant who is using another Participant's test facility for certification testing.

D2.3 Requirements.

D2.3.1 AHRI. AHRI shall work directly with the Test Stand Provider and Test Stand User to determine the location and date of each test and shall promote the equal distribution of testing among all Program Participant's test facilities by global region (China, Europe, India, Middle East, North America).

D2.3.2 Test Stand Provider. The Test Stand Provider shall:

- Allow AHRI Certification testing of Test Stand User's units at AHRI approved test facilities within 120 days of notification by AHRI;
- Permit Test Facility Users to witness the testing in accordance with the Program Governing Documents. All data, test results, calculations, reports, information and other documents gathered or prepared by Test Stand Provider become the property of AHRI in accordance with the Program License Agreement and shall be removed (i.e. deleted and destroyed) from the records of the Test Stand Provider immediately after it has been provided to AHRI;
- Operate the Test Stand when conducting testing to be witnessed by the Representative. The Test Stand User shall not be permitted to participate in the operation of the Test Stand during test but may supervise the operation and adjustment of the air-conditioner or heat pump; and

- Invoice the Test Stand User testing fees which have been approved by the AHRI ULE Compliance Committee for AHRI Certification Program testing.

D2.3.3 Test Stand User. The Test Stand User shall:

- Schedule AHRI Certification testing at AHRI approved test facilities a minimum of 60 days prior to testing; and
- Provide installation and setup instructions a minimum of 30 days prior to testing; and
- Pay invoiced Test Stand User testing fees. The Test Stand User may provide personnel to witness the setup, testing, and tear down of the unit. These personnel shall be escorted at all times by the Test Stand Provider.