

OPERATIONS MANUAL

UNIT VENTILATORS CERTIFICATION PROGRAM



AHRI UVNT OM – DECEMBER 2019

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PREFACE

The following manual outlines the procedures and policies of the Performance Certification Program for Unit Ventilators Certification Program (UVNT) operated by the Air-Conditioning, Heating, and Refrigeration Institute (AHRI). This manual is to be used in conjunction with the AHRI General Operations Manual for AHRI Certification Programs and the Primary Equipment Type product-specific operations manual. Where the AHRI General Operations Manual and this product-specific manual differ, this product-specific operations manual shall prevail. Where the Primary Equipment Type product-specific operations manual 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 General Operations Manual, can be accessed through the AHRI website, www.ahrinet.org.

The UVNT Certification Program by AHRI provides for independent verification of the Unit Ventilators Certification Program 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 UVNT 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 this 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, *General Requirements for Bodies Operating Product Certification Systems*.

Note:

This manual supersedes Unit Ventilators Certification Program Operations Manual, January 2018.

CERTIFICATION OPERATIONS MANUAL FOR
UNIT VENTILATORS CERTIFICATION PROGRAM

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1. Program Overview

1.1 Applicable Rating Standard. It is mandatory for program Participants to comply with the provisions of the latest edition of AHRI Standard 840, *Unit Ventilators* (Standard). A copy of the Standard is available for download from the AHRI website, www.ahrinet.org.

1.2 Product Definitions.

1.2.1 Unit Ventilator. A factory-made assembly, equipped with outside air ventilation and return air dampers capable of introducing ventilation air of at least 80% of rated Standard Air Flow, while also having the capability to provide any combination of the following functions: humidity control, heating or cooling, and filtering of air. Humidity control, heating or cooling, supplementary to the ventilation air, may be remote or an integral part of the unit. This equipment is designed for free delivery of air into a room, but may be applied with minimal ductwork having a static resistance not exceeding 0.50 in. H₂O [125 Pa]. The unit ventilator can be either vertical floor standing or horizontally mounted; in or adjacent to the space it serves; and is generally provided with air capacities of 3000 cfm [1416 m³/s] or less.

1.2.2 Primary Equipment Type. A Unit Ventilator can be classified as one of the following:

1.2.2.1 Self-Contained Unit Ventilators. Any equipment as defined in AHRI Standard 310/380 with ventilation capabilities as defined in AHRI Standard 840.

1.2.2.2 Water-Source Self-Contained Unit Ventilators. Any equipment as defined in ANSI/AHRI/ASHRAE/ISO Standard 13256-1 with ventilation capabilities as defined in AHRI Standard 840.

1.2.2.3 Room Fan-Coil Unit Ventilators. Any equipment as defined in AHRI Standards 440 or 210/240 with ventilation capabilities as defined in AHRI Standard 840.

1.3 Program Scope. This program applies to 60 Hz Production Models of Unit Ventilators, as defined in Section 1.2.

1.4 Intended Market. The Intended Market for this certification program, where the Standard applies, includes all products defined in Section 1.3 that are sold for use in U.S. and Canada (U.S., U.S. Territories, and Canada).

1.5 Basic Model Groups (BMGs). A Participant's listing shall be grouped by BMG. At a minimum, a BMG is a regular range of units having the same Primary Equipment Type; BMG criteria of the Primary Equipment Type; and the unit configuration as stated below:

- Primary Equipment Type; and
 - Packaged Terminal Air-Conditioners/Heat-Pumps (AHRI 310/380),
 - Room Fan-Coil (AHRI 440),
 - Unitary Small Air-Conditioners and Air-Source Heat Pumps (AHRI 210/240), or
 - Water-Source Heat Pump (ANSI/AHRI/ASHRAE/ISO 13256-1)
- Unit configuration.
 - Horizontal, or
 - Vertical

Refer to each product-specific OM as listed for BMG criteria of the Primary Equipment Type. A unit of a given nominal air flow (cfm) is a model within a BMG and shall be listed separately in the AHRI Directory of Certified Product Performance (Directory).

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 General Operations Manual, Section 4.

STEP 2.1.1 *Certification Application Package.* In addition to the Application for AHRI Certification and Annual Sales Volume Form noted in the AHRI General Operations Manual, Section 4, STEP 4.1, Applicants shall submit the following documentation to AHRI:

- Form UVNT-DS1, Unit Ventilator Certification Program Data Submittal
- All DS-1 forms from each of the Primary Equipment Type product-specific OM
- One test report for each 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 (for Unitary-type Equipment only).
- An Applicant requesting AHRI to submit data to CEC, DOE, and NRCAN shall submit third-party authorization, compliance forms and other necessary information (for WSHP-type Equipment only).
- Additional information may be needed to meet EPA ENERGY STAR® program requirements (for Unitary-type and applicable WSHP-type Equipment only).

All 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 General Operations Manual.

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 General Operations Manual.

STEP 2.1.3 *Selection and Acquisition of Test Samples.*

STEP 2.1.3.1 *Number of Qualification Tests.* 20% of an Applicant's BMGs shall be tested, with a minimum of two (2) models. Fractional numbers shall be rounded up to the next whole number. (Example: 20% of 11 BMGs is 2.2 so the Participant would have 3 tests.)

STEP 2.1.3.2 *Acquisition of Qualification Test Samples/Selection Criteria.* Within 60 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.

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, any applicable Operating Tests shall be conducted in accordance with the primary equipment-type OM for all qualification tests.

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 in order to qualify into the certification program. A new sample will 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 2.5.

STEP 2.1.4.3 First Sample Qualification Test Failure. Refer to Section 4, STEP 4.4.2 of the AHRI General Operations Manual 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 General Operations Manual 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 General Operations Manual.

2.2 Private Brand Marketer (PBM) Applicants. With the additions noted below, the PBM qualification process shall proceed according to the AHRI General Operations Manual, 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. In addition to the Application for AHRI Certification Form noted in the AHRI General Operations Manual, Section 5, STEP 5.1, Applicants shall submit the following documentation to AHRI:

- Form UVNT-DS2, Certified product data sheets noting PBM/OEM equipment match-ups
- An Applicant requesting AHRI to submit data to CEC, DOE, FTC, and NRCAN shall submit third-party authorization, compliance forms and other necessary information (for Unitary-type Equipment only).
- An Applicant requesting AHRI to submit data to CEC, DOE, and NRCAN shall submit third-party authorization, compliance forms and other necessary information (for WSHP-type Equipment only).
- Additional information may be needed to meet EPA ENERGY STAR® program requirements (for Unitary-type and applicable WSHP-type Equipment only).

All electronic forms shall be obtained from AHRI.

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 General Operations Manual.

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 General Operations Manual.

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 General Operations Manual.

3. Equipment Selection and Testing

3.1 Annual Testing Requirement. 20% of a Participant's BMGs shall be tested annually, with a minimum of two (2) models. Fractional numbers shall be rounded up to the next whole number. (Example: 20% of 11 BMGs is 2.2 so the Participant would have 3 tests.)

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.

3.3 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.

3.4 Method of Acquiring Test Samples. AHRI or Laboratory personnel shall make a random selection of a sample from the Participant’s stock units of no fewer than (2) two units; or a Random Component Sample Selection for build-to-order units. Participant shall complete and submit Form UVNT-SEL1, located in Appendix A.3, within 30 calendar days of the date of the annual test requirement selection letter, sent by AHRI. Laboratory personnel shall randomly select stock units within 60 calendar days of the annual test requirement selection letter by AHRI. Selected samples shall be shipped to the Laboratory and shall be accompanied by the Participant’s published installation instructions in either printed or electronic format. Refer to Section 9 of the AHRI General Operation Manual.

3.5 Sample Acquisition Timeframe. The Participant shall deliver the selected sample(s) to the Laboratory within 14 calendar days of Random Sample Selection, by Laboratory personnel, or Random Component Selection by AHRI, as applicable.

3.6 Participant’s Required Equipment Provisions. The Participant shall provide any appurtenance(s) required for the sample to operate as intended. Air filters built into samples shall be kept in place during tests.

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

Table 1. Certified Ratings for Unit Ventilators							
Certified Items	Types of Unit Ventilators	Packaged Terminal Units (AHRI 310/380)		Room Fan-Coil (AHRI 440)	Unitary Small Units (AHRI 210/240)		Water-Source Heat Pump, Water-to-Air (ANSI/AHRI/ASHRAE/ISO 13256-1)
		AC	HP		AC	HP	
Cooling Capacity	Full Load (Std./High Temp)	Std. Temp		√	High Temp		Std. Temp
	Part Load (Low Temp.)	--		--	--		√
Cooling Efficiency	Full Load (EER/SEER)	EER		--	EER and SEER		EER
	Part Load (EER/IPLV)	IPLV		--	--		EER
Heating Capacity	Full Load (Std./High Temp)	Std. Temp		--	--	High Temp	Std. Temp
	Part Load (Low Temp.)	--		--	--		√
Heating Efficiency	Full Load (COP/HSPF)	--	COP	--	--	HSPF	COP
	Part Load (COP/HSPF)	--		--			COP
Sensible Cooling Capacity		--		√	--		--
Std. Ventilation Rate		√		√	√		√
Power Input		--		√	--		--

3.8 Verified Data. In accordance with the Standards, the following are verified by test:

Table 2. Verified Ratings for Unit Ventilators							
Verified Items		Types of Unit Ventilators		Room Fan-Coil (AHRI 440)	Unitary Small Units (AHRI 210/240)		Water-Source Heat Pump, Water-to-Air (ANSI/AHRI/ASHRAE/ISO 13256-1)
		Packaged Terminal Units (AHRI 310/380)			AC	HP	
Air Flow	(cfm)	√		√		√	√
Fluid Flow	(gpm)	--		√		--	√
Water Temp. Rise	ΔT	--		√		--	--

3.9 Test Failures.

3.9.1 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 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]);
- Obsolete the model, which also obsoletes all models within the corresponding BMG; or
- Refer to the Primary Equipment Type product-specific OM for applicable failure options not outlined above.

3.9.2 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 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; or
- Refer to the Primary Equipment Type product-specific OM for applicable failure options not outlined above.

4. Challenge Tests

Refer to Section 10 of the AHRI General Operations Manual.

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 General Operations Manual.

5.1 Publication of Ratings in Certified Directory. The following information pertaining to each model certified shall be published in the Directory:

- AHRI Certified Reference Number;
- Name of Manufacturer;
- Model Status;
- Brand Name of Model;
- Model Number(s) or Designation(s); and
- Ratings outlined in Tables 1 and 2 of this Operations Manual.

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

6. Assessment and Payment of Certification Fees

Except as noted below, the assessment and payment of certification fees shall proceed according to the AHRI General Operations Manual, Section 12.

6.1 Equipment Delivery/Disposal Fees. The Participant is responsible for the delivery and expenses associated with shipping test samples to and from the Laboratory. Following the completion of the test, the Participant shall provide instruction to the Laboratory regarding the disposal/shipment of the sample(s). The Laboratory shall invoice the Participant for expenses associated with the disposal/shipment of the sample from the Laboratory's facility to a location designated by the Participant.

7. Issuance of Violations and/or Termination

Refer to Section 14 of the AHRI General Operations Manual.

8. Program Hierarchy, Complaints, and the Appeals Process

Refer to Section 15 of the AHRI General Operations Manual.

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

Refer to Section 8 of the AHRI General Operations Manual.

APPENDIX A
DATA SHEETS

A.1 UVNT-DS1, Unit Ventilator Certification Program OEM Data Submittal. Complete this worksheet to provide information and data for each model certified shall be published in the Directory.

Electronic form available for download from AHRI's website.

A.2 UVNT-DS2, Unit Ventilator Certification Program PBM Data Submittal. Complete this form to indicate the relationship between PBM/OEM equipment for each PBM model certified.

Electronic form available for download from AHRI's website.

A.3 UVNT-SEL1, Unit Ventilator Selection Decision Form. The following information pertaining to each model certified shall be published in the Directory: