

OPERATIONS MANUAL

INDOOR POOL DEHUMIDIFIERS CERTIFICATION PROGRAM



AHRI IPD OM - JANUARY 2018

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PREFACE

The following manual outlines the procedures and policies of the AHRI Indoor Pool Dehumidifiers (IPD) Certification Program 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. Where the AHRI General 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 IPD Certification Program by AHRI provides for independent verification of the performance of the Indoor Pool Dehumidifiers Participant's equipment. 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 IPD Certification Mark hereinafter referred to as the "Mark". The Mark is the Participant's public representation that the ratings of randomly selected units have been verified by an independent laboratory in accordance with test procedures prescribed by this operations manual. A License 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 Marks 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 license 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 AHRI IPD Operations Manual - January 2017

CERTIFICATION OPERATIONS MANUAL FOR
INDOOR POOL DEHUMIDIFIERS

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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 910, *Performance Rating of Indoor Pool Dehumidifiers* (Standard). A copy of the Standard is available for download from the AHRI website, www.ahrinet.org.

1.2 Product Definitions.

1.2.1 Indoor Pool Dehumidifier. A type of air-cooled or liquid-cooled electrically operated, vapor compression refrigeration system; factory assembled as a single package or split system, which includes an indoor cooling/dehumidifying coil, an refrigerant air reheat coil, compressor(s) and an air moving device. It may also include a Refrigerant Heat Recovery Unit, an auxiliary refrigerant condenser, Economizer, and an air-to-air heat recovery device. It shall provide the function of dehumidifying, air circulation, air reheating and may include the function of air-cooling, air-cleaning, pool water heating and air-to-air heat recovery.

1.2.2 Outdoor/Exhaust Air. All Indoor Pool Dehumidifiers to be tested with any outdoor air or exhaust air openings used for ventilation purposes shall be blocked off by the Participant before shipment to the testing facility.

1.3 Program Scope. This program applies to all production line OEM and PBM production models of residential, commercial, and industrial IPDs, as defined in Section 1.2 and rated below a Moisture Removal Capacity (MRC) of 25.0 kg/h at Standard Rating Conditions per Table 2 of AHRI Standard 910. For external resistance, refer to Table 3 of AHRI Standard 910.

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 North America (U.S., U.S. Territories, Canada, and Mexico).

1.5 Basic Model Groups (BMGs). A Participant’s listing shall be grouped for the IPD program as categorized in Table 1.

Table 1. Moisture Removal Capacity, kg/h			
-		BMG 1	≤ 5.0
5.0	>	BMG 2	≤ 10.0
10.0	>	BMG 3	≤ 15.0
15.0	>	BMG 4	≤ 20.0
20.0	>	BMG 5	≤ 25.0

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 1, Applicants shall submit the following:

- Form IPD-DS1. Data Submittal Form.
- One test report for each BMG
- Published installation instructions in printed or electronic format.

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. 30% of the Applicant's BMGs shall be tested. Fractional models should be mathematically rounded to the nearest whole number using traditional rounding methods. A minimum of two (2) models shall be tested.

Each Participant shall have in stock three (3) of each of the following major components for AHRI or the Laboratory personnel (as required) to select from:

- Fan;
- Evaporator coil;
- Refrigerant air reheat coil;
- Compressor;
- Liquid condenser (if rating with this option); and/ or
- Pool Water condenser (if rating with this option).

STEP 2.1.3.2 Acquisition of Qualification Test Samples/Selection Criteria. Within 30 calendar days of a request by AHRI, the Applicant shall have units 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 Laboratory with the published ratings. The Laboratory shall test the units, in accordance with the latest edition of the Standard, against the Published Ratings.

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

- Moisture Removal Capacity Test; and/or
- Moisture Removal Efficiency Test

If the sample fails the Operating Tests, a second sample, to be selected by AHRI, 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 sample 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 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 initial 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 1, Applicants shall submit the following documentation to AHRI:

- Form IPD-DS2. This form shows the correlation between PBM Applicant's units and OEM Applicant's units.

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. 30% of the Participant's BMGs shall be tested, with a minimum of two (2) models. Fractional models should be mathematically rounded to the nearest whole number using traditional rounding methods.

3.2 Location of Test. Testing shall be performed at the Laboratory and units 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 Methods for Acquiring Test Samples. AHRI, or its representative, shall make a Random Component Selection from the Participant's stock inventory within 90 calendar days of model selection by AHRI. Selected samples shall be shipped to the Laboratory accompanied by the Participant's published installation instructions in printed or electronic format. Refer to Section 9 of the AHRI General Operations Manual.

Each Participant shall have in stock three (3) of each of the following major components for AHRI or the Laboratory personnel (as required) to select from:

- Fan;
- Evaporator coil;
- Refrigerant air reheat coil;
- Compressor;
- Liquid condenser (if rating with this option); and/or
- Pool Water condenser (if rating with this option).

3.5 Sample Acquisition Timeframe. The Participant shall assemble the sample within 45 calendar days of Random Component Selection and then deliver the selected sample(s) to the Laboratory within 14 calendar days after being assembled.

3.6 Operating Tests. In addition to the Performance Tests, AHRI shall conduct the following Operating Tests on each model:

- Moisture Removal Capacity; and
- Moisture Removal Efficiency.

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

- Moisture Removal Capacity, kg of moisture/h;
- Moisture Removal Efficiency, kg of moisture/kWh;
- Total Cooling Capacity, kW;
- Net Sensible Cooling Capacity (if applicable), kW;
- Total Heat of Rejection to Indoor Air, kW;
- Total Heat of Rejection to Outdoor Air (if applicable), kW;
- Total Heat of Rejection to Liquid (if applicable), kW; and
- Total Input Power, kW.

3.8 Test Failures.

3.8.1 Operating Test Failure. If the initial failure is an Operating Test, the Participant shall select one of the following options:

- Obsolete all models within the BMG; or
- Test second sample of the model. If the second sample fails the Operating Tests, the BMG shall be obsolete.

3.8.2 Options Following First Sample Failure. When the Participants are notified of a first sample certified rating failure, they have 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. The model shall be re-rated to the nearest "round-off" capacity, but no higher than the actual final test results.
- Test second sample of the same model (sample shall be available within the timeframe allotted in Section 3.5 following notification of failure).
- Obsolete the model.

3.8.3 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.

4. Challenge Tests

Refer to Section 10 of the AHRI General Operations Manual.

5. AHRI Directory of Certified Product Ratings

5.1 Publication of Ratings in Certified Directory. For each certified model, the Directory shows:

- AHRI Certified Reference Number
- Model Status
- Name of Manufacturer
- Brand Name of Model
- Model Number(s) or Designation(s)
- Remote Rejection Unit Model Number (if applicable)
- Moisture Removal Capacity, kg of moisture/h
- Moisture Removal Efficiency, kg of moisture/kWh
- Total Cooling Capacity, kW
- Net Sensible Cooling Capacity (if applicable), kW
- Total Heat Of Rejection To Indoor Air, kW
- Total Heat Of Rejection To Outdoor Air (if applicable), kW
- Total Heat Of Rejection To Liquid I (if applicable), kW
- Total Input Power, kW

5.2 Data Forms. Each Participant shall list its products by BMG. If available, in lieu of submitting hard copy forms, the Participant may upload data via the Directory. Contact AHRI to see if this feature is available.

6. Assessment and Payment of Certification Fees

6.1. Equipment 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 instructions 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

Except as noted below, refer to Section 8.1 of the AHRI General OM and the AHRI Brand Usage Guide.

9.1 Publication of Non-Certified Ratings (Application Ratings). Manufacturer's publications may contain Application Ratings. However, certification can only be implied for products operating at Standard Rating Condition. Where ratings are included that are outside of the scope of the Certification Program, they shall be accompanied by the following statement: "Ratings outside of the scope of the AHRI Indoor Pool Dehumidifiers Certification Program."

APPENDIX A: FORM: IPD-DS1

AIR-CONDITIONING, HEATING & REFRIGERATION INSTITUTE SHEET _____ OF _____

IPD CERTIFICATION DATA (See instructions below) DATE: _____

REVISED: _____

* NOTE: Rated Condition B is only for Units previously tested at Condition A or Condition C.

Company (OEM)	
Location	
Trade/Brand Name	
Unit Model Number	
Remote Rejection Unit Model Number (if applicable)	
Unit Configuration	
AHRI Type from Table 1 of AHRI Standard 910	
Voltage - Hertz - Phase	
Air Flow [m ³ /s]	
Pool Water Flow [L/s] (if applicable)	
Another Rejection Liquid Flow [L/s] (if applicable)	
Dehumidification Ratings @ Rated Condition A from Table 2 of AHRI Standard 910 – If Applicable	
Total Cooling Capacity [W]	
Total Heat Rejection Capacity [W]	
Moisture Removal Capacity (MRC) [kg/h]	
Total kW	
Moisture Removal Efficiency (MRE) [kg/kWh]	
Dehumidification Ratings for Sensible Cooling @ Rated Condition B from Table 2 of AHRI Standard 910 – If Applicable*	
Total Cooling Capacity [W]	
Net Sensible Cooling Capacity [W]	
Total Heat Rejection Capacity [W]	
Moisture Removal Capacity (MRC) [kg/h]	
Moisture Removal Efficiency (MRE) [kg/kWh]	
Total kW	
Dehumidification Ratings for Sensible Cooling with Pool Heating @ Rated Condition B from Table 2 of AHRI Standard 910 – If Applicable*	
Total Cooling Capacity [W]	
Net Sensible Cooling Capacity [W]	
Total Heat Rejection Capacity [W]	
Moisture Removal Capacity (MRC) [kg/h]	
Total kW	
Moisture Removal Efficiency (MRE) [kg/kWh]	
Dehumidification Ratings @ Rated Condition C from Table 2 of AHRI Standard 910 – If Applicable	
Total Cooling Capacity [W]	
Heat Rejection to Air Capacity [W]	
Heat Rejection to Liquid Capacity [W]	
Moisture Removal Capacity (MRC) [kg/h]	
Total kW	
Moisture Removal Efficiency (MRE) [kg/kWh]	

I certify that the model listed above meets all of the requirements of the Standard.

Signed: _____ Title: _____

INSTRUCTIONS

This certification form applies to Original Equipment Manufacturers (OEM) only. A completed form shall be submitted for certification of all eligible models.

**APPENDIX B: FORM IPD-DS2
AHRI INDOOR POOL DEHUMIDIFIERS CERTIFICATION PROGRAM DATA SHEET
(PRIVATE BRAND MARKETER)**

PRIVATE BRAND MARKETER _____ TRADE OR Brand Name _____
 ORIGINAL EQUIPMENT MANUFACTURER _____ Date _____
 PBM Model Designation _____
 OEM Model's AHRI Certified Reference Number _____

Company (OEM)	
Location	
Trade/Brand Name	
Unit Model Number	
Remote Rejection Unit Model Number (if applicable)	
Unit Configuration	
AHRI Type from Table 1 of AHRI Standard 910	
Voltage - Hertz - Phase	
Air Flow [m ³ /s]	
Pool Water Flow [L/s] (if applicable)	
Another Rejection Liquid Flow [L/s] (if applicable)	
Dehumidification Ratings @ Rated Condition A from Table 2 of AHRI Standard 910 – If Applicable	
Total Cooling Capacity [W]	
Total Heat Rejection Capacity [W]	
Moisture Removal Capacity (MRC) [kg/h]	
Total kW	
Moisture Removal Efficiency (MRE) [kg/kWh]	
Dehumidification Ratings for Sensible Cooling @ Rated Condition B from Table 2 of AHRI Standard 910 – If Applicable	
Total Cooling Capacity [W]	
Net Sensible Cooling Capacity [W]	
Total Heat Rejection Capacity [W]	
Moisture Removal Capacity (MRC) [kg/h]	
Moisture Removal Efficiency (MRE) [kg/kWh]	
Total kW	
Dehumidification Ratings for Sensible Cooling with Pool Heating @ Rated Condition B from Table 2 of AHRI Standard 910 – If Applicable	
Total Cooling Capacity [W]	
Net Sensible Cooling Capacity [W]	
Total Heat Rejection Capacity [W]	
Moisture Removal Capacity (MRC) [kg/h]	
Total kW	
Moisture Removal Efficiency (MRE) [kg/kWh]	
Dehumidification Ratings @ Rated Condition C from Table 2 of AHRI Standard 910 – If Applicable	
Total Cooling Capacity [W]	
Heat Rejection to Air Capacity [W]	
Heat Rejection to Liquid Capacity [W]	
Moisture Removal Capacity (MRC) [kg/h]	
Total kW	
Moisture Removal Efficiency (MRE) [kg/kWh]	

* NOTE: Rated Condition B is only for Units previously tested at Condition A or Condition C.

I certify that the model listed below meets all of the requirements of the Standard.

Signed: _____ Title : _____

Form IPD-DS2 applies to PBMs only. These are Participants who purchase a complete indoor pool dehumidifier from another Participant, designated as the Original Equipment Manufacturer (OEM). It is intended to eliminate unnecessary, repetitive filing of the same certification data. A complete form shall be submitted for certification of all eligible models not certified through the EDP (Electronic Data Procedures) allowed under the provisions of the AHRI certification programs.

For PBM certification, this form applies only when the OEM has previously certified the model(s) under his own model number designation.

"AHRI Standard Ratings" are the capacities, MRC, MRE, and kilowatts published, or to be published, by the PBM.

PLEASE NOTIFY AHRI IMMEDIATELY OF ANY CHANGE OF OEM SOURCE.