December 14, 2016

Sherman Oaks, CA 91403-3514

Dear Mr. Pedersen:

We appreciate the opportunity to be of service to you. Please find enclosed one copy of Intertek Report No. 102782445CRT-002 covering the tests performed on your behalf.

Model(s) Tested:
AD3000

If there are any questions regarding the results contained in this report, or any of the other services offered by Intertek, please do not hesitate to contact me.

Sincerely,

Mike Podoliak
Technician
Energy Efficiency Group

# Test Report

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Project No. G102782445 Date: December 14, 2016

REPORT NO. 102782445CRT-002

RENDERED TO:

**Sherman Oaks, CA 91403-3514**

| | |
|---|---|
| Report Scope: | This testing is for AHAM AC-1 and EPA Energy Star program for Room Air Cleaners. |
| Limitation Statement: | The test data and results contained in this report are provided for client information and evaluation. |
| Authorization: | The tests were authorized signed Intertek Quote No. Qu-00733611 dated October 18, 2016. |
| Standards Used: | ANSI/AHAM AC-1-2015 entitled, "Association of Home Appliance Manufacturers Method for Measuring Performance of Portable Household Electric Room Air Cleaners" and IEC 62301 Ed. 2 entitled, "Household Electrical Appliances – Measurement of Standby Power" |
| Sample Description: | One prototype unit model AD3000, was supplied by the client and received on October 20, 2016. |
| Date of Tests: | December 1-2, 9, 2016 |

**Test Method:**

Tests were performed in accordance with ANSI/AHAM AC-1-2015 entitled ""Association of Home Appliance Manufacturers Method for Measuring Performance of Portable Household Electric Room Air Cleaners". This standard method has defined limits of measurability. The practical limits of measurability are: Dust 10 to 400 CADR, Tobacco smoke 10 to 450 CADR and Pollen 25 to 450 CADR. The statistical validity of test results outside of the stated practical limits is questionable and unevaluated. Clean Air Delivery Rates (CADR's) were determined using Tobacco Smoke, AC Fine Test Dust, and Paper Mulberry Pollen.

Additional requirements for energy taken from IEC 62301 Ed. 2 entitled, "Household Electrical Appliances – Measurement of Standby Power".

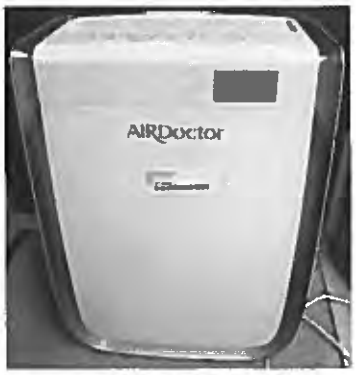
Monitored particle size ranges for the three particulates were as follows:
Smoke - 0.10-1.0 microns; Dust - 0.5-3 microns; Pollen - 5-11 microns.

**Test Equipment List:**

| Equipment Used | Model Number | Intertek Control # | Cal. Due Date | Date Cal. Performed |
|---|---|---|---|---|
| Airborne particle Spectrometer | HSLAS II | N1203 | 1/12/17 | 1/12/16 |
| Aerodynamic Particle Sizer | 3321 | A-261 | 10/12/17 | 10/12/16 |
| Fluidized Bed Aerosol Generator | 3400 | -- | | |
| Temperature/Humidity Sensor | HMW30YB | T680 | 10/10/17 | 10/10/16 |
| Power Analyzer | WT210 | G065 | 10/10/17 | 10/10/16 |

**Device Under Test Description**

The device tested for this report was Model AD3000. The following device settings were used during testing: Highest Fan Speed, Ionizer On. This device contains features which require ozone testing for Energy Star Certification.




**AD3000**

**Results of Performance Tests:**

| Model/Configuration | Test Particulate | Natural Decay Rate | CADR ($FT^3$/Min) | CADR STDEV. | Power (Watts) |
|---|---|---|---|---|---|
| **AD3000, Unit 1, 1610201103-001, Highest Speed, Ionizer on, 120 Volts, 60 Hertz** | **Smoke** | **0.00248** | **326.2** | **2.5** | **114.7** |
| | **Dust** | **0.00477** | **343.2** | **2.9** | **116.8** |
| | **Pollen** | **0.09724** | **373.2** | **34.5** | **116.3** |

**Conclusion:**

The results reported are within the limits of measurability of the ANSI/AHAM AC-1-2015 "Association of Home Appliance Manufacturers Method for Measuring Performance of Portable Household Electric Room Air Cleaners" Test Method.

## Energy Star CADR Testing:

**Test Sample Information**

| Manufacturer/ Organization Name | Model Number | Serial Number | Nameplate Voltage | Nameplate Frequency Hz | Nameplate Watts |
|---|---|---|---|---|---|
| Envion | AD3000 | NA | NA | NA | NA |

**Test Criteria**

| Test Voltage | Test Frequency | Ambient Test Temperature °F | Ambient Humidity %RH |
|---|---|---|---|
| 120v +/- 1 | 60Hz +/- 1Hz | 70°F +/- 5°F | 40% +/- 5% |

**Test Results**

| Test Sample | Test Voltage | Test Frequency | Ambient Test Temperature °F | Ambient Humidity %RH | Dust CADR | Watts | Dust CADR/Watt |
|---|---|---|---|---|---|---|---|
| 1610201103-001 | 119.7 | 60 | 68 | 40 | 343.2 | 116.8 | 2.9 |

**Conclusion:**
Qualifying air cleaners must have a minimum 50 CADR (Dust) and CADR/watts must be ≥ 2 (Dust). These results illustrate that this sample does meet the Energy Star Program performance requirements.

## Stand By Power Testing:

**Test Criteria – IEC 62301**

| Test Voltage | Test Frequency | Total Harmonic Distortion of the Electricity Supply System | Ambient Test Temperature °F |
|---|---|---|---|
| 115v +/- 1% | 60Hz +/- 1% | ≤ 2% | 73.4°F +/- 9°F |

**Test Results**

| Test Sample | Test Voltage | Test Frequency | Total Harmonic Distortion of the Electricity Supply System | Ambient Test Temperature °F | Standby Power Watts |
|---|---|---|---|---|---|
| 1610201103 -001 | 115.1 | 60 | 0.22% | 67.1 | 0.5 |

**Conclusion:**

Minimum Standby Power Requirement is < 2 Watts. The results illustrated in the Standby Power Data shows that this unit meets the criteria.

Report Reviewed By:

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Engineer
Energy Efficiency
Group

Report Completed By:

Michael T. Podoliak
Tech 1
Energy Efficiency