



ENERGY STAR® Program Requirements Product Specification for Automatic Commercial Ice Makers

Final Draft Test Method Rev. Mar-2012

1 OVERVIEW

The following test method shall be used for determining product compliance with requirements in the ENERGY STAR Eligibility Criteria for Automatic Commercial Ice Makers (ACIM).

2 APPLICABILITY

ENERGY STAR test requirements are dependent upon the feature set of the product under evaluation. The following guidelines shall be used to determine the applicability of each section of this document:

2.1 Included Products

A) All sections of this test method apply to all products covered in the scope defined in ENERGY STAR Eligibility Criteria for Automatic Commercial Ice Makers:

- 1) Air-cooled batch and continuous type, Ice Making Head (IMH), Remote Condensing Units (RCU) with dedicated condensing units, and Self-contained Units (SCU).
- 2) Air-cooled RCU units designed for connection to remote rack compressors that are alternately sold (with the same model number) with a dedicated remote condensing unit.

2.2 Excluded Products

A) The following products are not included in the scope defined in ENERGY STAR Eligibility Criteria for Automatic Commercial Ice Makers:

- 1) Air-cooled RCU units that are designed only for connection to remote rack compressors.

3 DEFINITIONS

Unless otherwise specified, all terms used in this document are consistent with the definitions in the ENERGY STAR Eligibility Criteria for Automatic Commercial Ice Makers.

- Variable Purge Setting: A setting that allows for the increase or decrease of purge water used during ice making to accommodate for different water hardness levels.

Note: Stakeholders commented that the variable purge setting definition and requirements were unnecessary; however, since variable purge settings affect potable water consumption, DOE believes purge settings must be specified in the test method..

30 **4 TEST CONDUCT**

31 **4.1 ENERGY STAR Guidance for Implementation of 10 Code of Federal**
32 **Regulations (CFR) Part 431, Subpart H**

33 A) Testing of RCUs designed for connection to remote rack compressors that are alternately sold (with
34 the same model number) with a dedicated remote condensing unit:

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36 1) Unit under test (UUT) shall be tested using the least efficient dedicated remote condensing unit
37 with which it is normally sold.

38 **Note:** The Draft 1 Test Method proposed including all RCUs designed for connection to remote rack
39 compressors. Stakeholders commented that testing RCUs designed for connection to only remote rack
40 compressors would be difficult and should not be included in the ENERGY STAR Program. As such, DOE
41 has proposed to remove those RCUs designed for connection to only remote rack compressors. DOE has
42 retained those RCUs designed for connection to remote rack compressors that are also sold (with the
43 same model number) with a dedicated remote condensing unit. DOE is interested in stakeholder
44 feedback regarding its proposal to test these units with the least efficient dedicated RCU with which it is
45 normally sold.

46 B) Purge Setting:

47 All variable purge settings shall be set in accordance with AHRI Standard 810-2007, *Performance Rating*
48 *of Automatic Commercial Ice-Makers*.

49 **Note:** Stakeholder comments noted that the purge setting requirements proposed in Draft 1 would add
50 testing and require additional clarification for each unit tested and recommended testing units as-shipped.
51 Draft 1 referenced AHRI 810-2007 with Addendum 1, which requires that variable purge settings shall be
52 tested as-shipped. As such, no extra requirements have been added, and the reference to AHRI 810-
53 2007 with Addendum 1 remains in Draft 2.
54 DOE is interested in stakeholder feedback regarding how setting variable purge according to AHRI 810-
55 2007, which requires testing as-shipped, affects the variable purge settings for testing.

56 **5 TEST CONDITIONS**

57 Unless otherwise specified within this Test Method, the test conditions for all portions of this method shall
58 be in accordance with 10 CFR Part 431 Subpart H.

59 **6 UNIT UNDER TEST (UUT) SETUP AND INITIALIZATION**

60 **6.1 Test Setup and Instrumentation**

61 A) Unless otherwise specified within this Test Method, the test setup and instrumentation for all portions
62 of this method shall be in accordance with the following:

- 63
64 1) 10 CFR Part 431 Subpart H.

65 **7 TEST METHOD**

66 When testing Automatic Commercial Ice Makers, the following test method(s) shall be used to determine
67 ENERGY STAR qualification:

Table 1: Test Methods for ENERGY STAR Qualification	
ENERGY STAR Requirement	Test Method Reference
Energy Consumption Rate (kWh/100 lbs ice)	10 CFR Part 431 Subpart H, with the guidance included in Section 4.1 .
Potable Water Use (gal/100 lbs ice)	AHRI Standard 810-2007, <i>Performance Rating of Automatic Commercial Ice Makers</i> with the guidance included in Section 4.1

68 **Note:** DOE is aware of the inconsistency between the ACIM preamble and the ACIM Test Method Final
69 Rule regarding the air and water temperatures to be used for testing. DOE will address this as part of its
70 regulatory process. Any changes made to the DOE Test Procedure will apply to the ENERGY STAR Test
71 Method for ACIMs.

72 **8 REFERENCES**

73 A) AHRI 810-2007 with Addendum 1. Performance Rating of Automatic Commercial Ice-Makers. March
74 2011.

75 B) 10 CFR Part 431 Subpart H, Automatic Commercial Ice Makers. 77 FR 1591. January 11, 2012.