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ENERGY STAR® Program Requirements Product Specification for Room Air Conditioners

Eligibility Criteria

Draft 2 Version 5.0 and Version 6.0

2 Following is the **Draft 2 Version 5.0** ENERGY STAR Product Specification for Room Air Conditioners. A
3 product shall meet all of the identified criteria to earn the ENERGY STAR.

4 **1 DEFINITIONS:**

5 Below are the definitions of the relevant terms in this document. Where noted below, definitions are
6 identical to the definitions in the U.S Department of Energy (DOE) test procedure at 10 Code of
7 Federal Regulations (CFR) 430, Subpart B, Appendix F or in 10 CFR 430.2. The definitions from the
8 CFR have been reprinted for ease of use, however, the CFR definitions take precedence and may be
9 modified by DOE during the rulemaking process.

10 A. Room Air Conditioner (RAC)¹: A window-mounted or through-the-wall-mounted encased
11 assembly, other than a “packaged terminal air conditioner,” that delivers cooled, conditioned air to
12 an enclosed space, and is powered by single-phase electric current. It includes a source of
13 refrigeration and may include additional means for ventilating and heating.

14 1. Casement-only¹: A RAC designed for mounting in a casement window with an encased
15 assembly with a width of 14.8 inches or less and a height of 11.2 inches or less.

16 2. Casement-slider¹: A RAC with an encased assembly designed for mounting in a sliding or
17 casement window with a width of 15.5 inches or less.

18 3. Reverse Cycle²: A RAC that employs a means for reversing the function of the indoor and
19 outdoor coils such that the indoor coil becomes the refrigerating system condenser, allowing
20 for heating of the air in the conditioned space; similarly, the outdoor coil becomes the
21 evaporator, utilizing outdoor air as a source of heat.

22 4. Through the Wall (TTW): A RAC without louvered sides. These units may also be referred to
23 as “built-in” units.

24 5. Electromechanical: A RAC that measures room temperature with a thermostat that
25 undergoes a physical change (dimensional, phase change, etc.) relative to temperature, and
26 utilizes mechanical rotary, switch, or similar user controls for cooling output, fan speed,
27 desired temperature, or other features.

28 B. Basic Model¹: All units of a given type of covered product (or class thereof) manufactured by one
29 manufacturer, having the same primary energy source, and which have essentially identical
30 electrical, physical, and functional (or hydraulic) characteristics that affect energy consumption,
31 energy efficiency, water consumption, or water efficiency.

32 C. Tested Basic Connected Model (TBCM): A basic model that has been tested to validate it meets
33 Demand Response criteria in section 4.G.

34 D. Cooling Capacity³: The amount of cooling, in British thermal units per hour (Btu/h), provided to a
35 conditioned space, measured under the specified conditions.

36 E. Cooling Mode³: An active mode in which a room air conditioner has activated the main cooling
37 function according to the thermostat or temperature sensor signal or switch (including remote
38 control).

39 F. Combined Energy Efficiency Ratio (CEER): The energy efficiency of a room air conditioner as
40 measured in accordance with the test procedure at 10 CFR 430, Subpart B, Appendix F or, a
41 DOE-approved test procedure waiver pursuant to 10 CFR Part 430.27 expressed in units of BTU
42 per watt-hour (BTU/Wh).

- 43 G. Ethylene Propylene Diene Monomer (EPDM): A closed-cell rubber that is used for outdoor
44 gasketing and/or heating, ventilating, and air conditioning applications.
- 45 H. Louvered Sides: Exterior side vents on a RAC enclosure to facilitate airflow over the outdoor coil.
- 46 I. Packaged Terminal Air Conditioner (PTAC)¹: A wall sleeve and a separate unencased
47 combination of heating and cooling assemblies specified by the builder and intended for mounting
48 through the wall. It includes a prime source of refrigeration, separable outdoor louvers, forced
49 ventilation, and heating availability energy.
- 50 J. Portable Air Conditioner⁴: A portable encased assembly, other than a “packaged terminal air
51 conditioner,” “room air conditioner,” or “dehumidifier,” that delivers cooled, conditioned air to an
52 enclosed space, and is powered by single-phase electric current. It includes a source of
53 refrigeration and may include additional means for air circulation and heating.
- 54 K. Represented Value: The represented value is determined pursuant to 10 CFR Part 429, Subpart
55 B § 429.15 and is the identical value certified to DOE, listed on the ENERGY STAR QPL, and
56 shown on consumer facing materials.

57 **Note:** In Draft 2 EPA has removed definitions for terms no longer included in the specification such as
58 Alternative Demand Response Validation (ADRV).

59 **2 SCOPE:**

- 60 A. Included Products: Products that meet the definition of a room air conditioner as specified herein
61 are eligible for ENERGY STAR certification, with the exception of those products listed in Section
62 2.B.
- 63 B. Excluded Products: PTACs, portable air conditioners, and room air conditioner models with
64 electric resistance heat as the primary heat source are not eligible for ENERGY STAR
65 certification under this specification. Products that are covered under other ENERGY STAR
66 product specifications, e.g., dehumidifiers, are not eligible for certification under this specification.

67 **3 CERTIFICATION CRITERIA:**

- 68 A. Combined Energy Efficiency Ratio (CEER): CEER shall be greater than or equal to the minimum
69 CEER as shown in Table 1.
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¹ 10 CFR 430, Subpart A, Section 430.2

² Derived from ASHRAE 58 – Method of Testing for Rating Room Air Conditioner and Package Terminal Air Conditioner Heating Capacity

³ 10 CFR 430, Subpart B, Appendix F

⁴ 10 CFR 430.2

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Table 1: Room Air Conditioner Efficiency Requirements

| Product Class | Version 5.0 CEER (Btu/Wh) (Effective: October 2023) | Version 6.0 CEER (Btu/Wh) (Effective: TBD 2026) |
|---|--|--|
| 1. Without reverse cycle, with louvered sides, and less than 6,000 Btu/h | 13.1 | 10% ≥ DOE Federal Minimums for each product class |
| 2. Without reverse cycle, with louvered sides, and 6,000 to 7,999 Btu/h | 13.7 | |
| 3. Without reverse cycle, with louvered sides, and 8,000 to 13,999 Btu/h | 14.7 | |
| 4. Without reverse cycle, with louvered sides, and 14,000 to 19,999 Btu/h | 14.4 | |
| 5a. Without reverse cycle, with louvered sides, and 20,000 to 27,999 Btu/h | 12.7 | |
| 5b. Without reverse cycle, with louvered sides, and 28,000 Btu/h or more | 12.2 | |
| 6. Without reverse cycle, without louvered sides, and less than 6,000 Btu/h | 12.8 | |
| 7. Without reverse cycle, without louvered sides, and 6,000 to 7,999 Btu/h | 12.8 | |
| 8a. Without reverse cycle, without louvered sides, and 8,000 to 10,999 Btu/h | 13.0 | |
| 8b. Without reverse cycle, without louvered sides, and 11,000 to 13,999 Btu/h | 12.8 | |
| 9. Without reverse cycle, without louvered sides, and 14,000 to 19,999 Btu/h | 12.6 | |
| 10. Without reverse cycle, without louvered sides, and 20,000 Btu/h or more | 12.7 | |
| 11. With reverse cycle, with louvered sides, and less than 20,000 Btu/h | 13.2 | |
| 12. With reverse cycle, without louvered sides, and less than 14,000 Btu/h | 12.6 | |
| 13. With reverse cycle, with louvered sides, and 20,000 Btu/h or more | 12.6 | |
| 14. With reverse cycle, without louvered sides, and 14,000 Btu/h or more | 11.7 | |
| 15. Casement-Only | 12.8 | |
| 16. Casement-Slider | 14.0 | |

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Note: EPA received both supportive and concerned feedback on the ENERGY STAR Room Air Conditioner Version 5.0, Draft 1 specification and its requirements and effective date. In response, EPA is proposing revised performance levels with this ENERGY STAR Room Air Conditioner Version 5.0, Draft 2 and adding a proposal for Version 6.0, which would go into effect on the compliance date of the revised DOE federal standards.

79 For Draft 1, EPA proposed levels that aligned to DOE’s proposed amended federal standards for RACs.
80 DOE proposed efficiency requirements that are more stringent than the current ENERGY STAR Version
81 4.0 thresholds for each product class, prompting EPA to revise to recognize energy efficiency leaders
82 during this transition and to continue enabling consumers to realize greater energy and cost savings.

83 While the concerned stakeholders expressed support and understood the need for revising the ENERGY
84 STAR specification, they indicated that the proposed changes are significant and that qualifying product
85 for the 2024 cooling season timeframe would be challenging at the proposed levels. Additionally,
86 numerous stakeholders expressed concern regarding selection of products should the Draft 1 levels take
87 effect now. They proposed Version 5.0 serves as an interim specification and a Version 6.0 seek
88 additional savings after the DOE standard takes effect. EPA, therefore, is proposing revised levels as part
89 of Draft 2 for Version 5.0, which would be in effect until DOE’s new federal minimum requirements require
90 compliance, as well as proposing future levels for Version 6.0 to be in effect beginning on the new DOE
91 standard compliance date. EPA understands that setting a future ENERGY STAR specification (Version
92 6.0) will be helpful to partners as they undergo significant redesign to meet new DOE minimum standards
93 for this seasonal product.

94 For Version 5.0, EPA proposes levels for product classes 3-5b and 8-16 that are 35% more efficient than
95 the current federal minimum standard or 22-24% more efficient than the current ENERGY STAR Version
96 4.0 specification. For product classes 1, 2, 6, and 7, the proposed levels would remain the same as Draft
97 1. These levels are 19-28% more efficient than the current federal minimum standards or 8-16% more
98 efficient than the current ENERGY STAR Version 4.0 specification.

99 For Version 6.0, EPA proposes that the efficiency requirements outperform DOE’s future/new Federal
100 Minimum Standard by 10% for all product classes. EPA requests stakeholder feedback to this proposal
101 for Version 6.

102 Per the discussion in Draft 1, EPA continues to plan on removing the 5% connected adder for demand
103 response capable RAC adder to preserve the efficiency of units that consumers expect. Relatedly, EPA is
104 proposing significant changes to the connected criteria that greatly simplify and eliminate the need for
105 connected criteria test procedure. Further discussion on these changes is found under Section 4.0 of this
106 proposed specification.

107 For payback analysis, EPA evaluated the market and DOE’s Technical Support Document (TSD) that was
108 published March 30, 2022. While some of the levels in Draft 2 are less stringent than proposed in Draft 1,
109 EPA still concurs with the payback period range of 0.7-4.0 years, depending on the product class for
110 Version 5.0. EPA anticipates evaluating payback for Version 6.0 as more relevant data become available.

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B. Energy Saver Mode:

1. Product shall have an “Energy Saver Mode,” which may be consumer override-able. In this mode, fan operation shall occur only in conjunction with compressor operation, with the following exceptions:
 - a. The fan may continue to run for a period not exceeding 5 minutes after the compressor is switched off.
 - b. After the above period, when the compressor is off, the fan may be cycled on for up to 17% of the total compressor off cycle time to facilitate accurate control of room temperature. For example, the fan may run for 1 minute then cycle off for at least 5 minutes or the fan may run for 2 minutes then cycle off for at least 10 minutes. Manufacturers may use other fan run durations, but fan run time shall not exceed 17% of total cycle time
 - c. TTW RACs, as defined in Section 1 may include an installer accessible setting that disables Energy Saver Mode functionality. The setting may be accessible from the product’s controls or may use a physical switch, jumper or the like. Appropriate measures shall be taken to ensure that the setting is implemented as an installer setting not intended to be consumer accessible. For example, physical switches or jumpers shall require the use of tool(s), removal of a panel, or the like; settings accessible in the product’s controls shall require a unique sequence of button presses, shall be in a hidden

135 menu, shall require an installer password, or the like.

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- 137 2. Products, excepting electromechanical RACs as defined in Section 1, shall ship with Energy
- 138 Saver Mode enabled as the default setting.
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- 140 3. Products, excepting electromechanical RACs as defined in Section 1, shall default to Energy
- 141 Saver Mode each time the unit is switched to cooling mode. However, products are not
- 142 required to default to Energy Saver Mode upon restoration of power after an electrical power
- 143 outage that results in a loss of power to the unit.

144 **Note:** EPA received a comment with a concern relating to safety for the Energy Saver mode being set by

145 default for TTW RACs. The commenter recommended that the specification allow for fan operation in

146 accordance with “relevant safety standards.” This recommended language will allow products using

147 flammable refrigerants to meet their respective safety standards and still qualify for ENERGY STAR

148 certification. Therefore, in Draft 2, EPA has removed the language proposed in Draft 1 related to this

149 requirement for TTW RACs.

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151 C. Filter Reminder:

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- 153 1. Products, excepting electromechanical RACs as defined in Section 1, shall have a filter
- 154 reminder that provides visual notification recommending the filter be checked, cleaned, or
- 155 replaced, as applicable. The filter reminder may be based on operating hours, sensing
- 156 technology, or other means.
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- 158 2. TTW RACs, as defined in Section 1, may include an installer accessible setting that disables
- 159 Filter Reminder functionality. The setting may be accessible from the product’s controls or
- 160 may use a physical switch, jumper or the like. Appropriate measures shall be taken to ensure
- 161 that the setting is implemented as an installer setting not intended to be consumer
- 162 accessible. For example, physical switches or jumpers shall require the use of tool(s),
- 163 removal of a panel, or the like; settings accessible in the product’s controls shall require a
- 164 unique sequence of button presses, shall be in a hidden menu, shall require an installer
- 165 password, or the like.
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167 D. Installation Requirements:

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- 169 1. *Installation Materials (window units only):* Room air conditioners intended for window
- 170 installations shall be shipped with weather stripping and/or gasket materials appropriate for
- 171 all intended applications, including the window size(s) the unit is typically used for, when
- 172 installed according to provided instructions. The materials shall minimize air leaks (seal)
- 173 between the room air conditioner and the window opening, including the area between the
- 174 room air conditioner and the window sash, and the area between the room air conditioner
- 175 and the windowsill (if bottom-mounted) or the window head (if top-mounted). The materials
- 176 shall also seal gaps between fixed and movable window sashes. Acceptable weather
- 177 stripping or gasket material includes, but is not limited to, vinyl clad foam, EPDM cellular
- 178 rubber, silicone rubber, or comparable alternatives that resist air and water infiltration as well
- 179 as degradation due to ultraviolet (UV) radiation exposure. Room air conditioner side curtains
- 180 must be tight fitting to minimize air leaks and contain insulation in the panel with a minimum
- 181 insulation value of R1 as determined by the Federal Trade Commission’s (FTC) Labeling and
- 182 Advertising of Home Insulation regulations, 16 CFR part 460.
- 183
- 184 2. *Installation Instructions:* Products shall ship with detailed installation documentation that
- 185 includes text and, where applicable, diagrams intended to facilitate installation that minimizes
- 186 air leakage and thermal losses. Instructions shall include recommendations on the proper
- 187 locations to install weather stripping or gaskets and, optionally, the use of temporary tape or
- 188 removable caulk to seal the unit in place. If the product is a TTW unit, instructions shall also
- 189 include a recommendation that the consumer install an appropriately sized cover, to include
- 190 recommended specifications that facilitate satisfactory fit, when the RAC is not in use to
- 191 provide additional insulation and air sealing.
- 192

- 193 E. Model Numbers: Model numbers used for ENERGY STAR certified product submissions shall be
194 consistent with FTC (as specified in 16 CFR 305) and DOE (as specified in 10 CFR 429.15(b))
195 submissions.
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197 F. Additional Reporting Requirements: Report the type of refrigerant used in the room air
198 conditioner, for example R-32 or R-290.

199 **4 CONNECTED PRODUCT CRITERIA:**

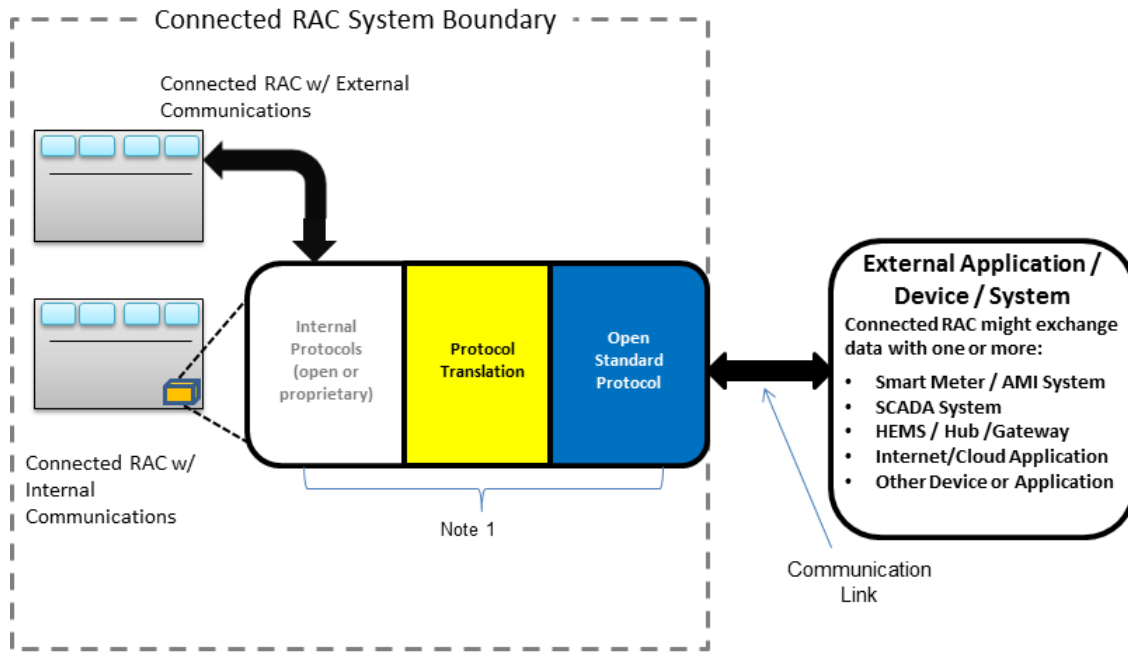
200 The following optional connected criteria are applicable to Included Products, Section 2.A., that meet
201 the definition of a room air conditioner.

202 A. Connected RAC System

203 To be recognized as connected, a Connected RAC System, as shown in Figure 1) shall include
204 the appliance plus all elements (hardware, software) required to enable communications in
205 response to consumer-authorized energy related commands (*not including third-party remote*
206 *management which may be made available solely at the discretion of the manufacturer*). These
207 elements may be resident inside or outside of the base appliance. This capability shall be
208 supported through one or more means, as identified in Section 4.G.

209 The specific design and implementation of the Connected RAC System is at the manufacturer's
210 discretion provided it is interoperable with other devices via open communications protocol and
211 enables economical consumer-authorized third-party access to the functionalities provided for in
212 Sections 4.B, 4.D and 4.F., and the capabilities shall be supported through one or more means,
213 as identified in Section 4.G.

214 The product must continue to comply with the applicable product safety standards – the addition
215 of the functionality described below shall not override existing safety protections and functions.

Figure 1. Connected RAC System Boundary – Illustrative Example

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218 *Note 1: Communication device(s), link(s) and/or processing that enables open standards-based communication between*
 219 *the Connected RAC System and Energy Management Device/Application(s). These elements could be within the base*
 220 *appliance, and/or an external communication module, a hub/gateway, or on the Internet/cloud.*

221 **B. DR Criteria**

222 The Connected RAC System will comply with either OpenADR 2.0B or with CTA-2045B, or both.

223 **Note:** In the years since EPA first instituted groundbreaking connected criteria with the help of our
 224 stakeholders, the practice and market for connected products has matured significantly. Largely,
 225 consumer demand for the increased amenity, such as the ability to control a RAC remotely, has been the
 226 biggest driver of connectivity in products. Meanwhile, utilities have experimented with using connected
 227 appliances to limit demand peaks and to shift load to times when power is clean and inexpensive.
 228 Because a 5% credit associated with the connected adder is significant in terms of efficiency, a test
 229 procedure was necessary to ensure that RAC connectivity provided meaningful value to the market
 230 and/or additional potential for more energy savings. However, EPA understands that sophisticated
 231 connected capabilities that the ENERGY STAR room air conditioner Version 4.0 specification currently
 232 includes have not been widely used in the market, nor is EPA aware of any utilities with plans to
 233 incorporate these capabilities. In fact, even those utilities that had experimented with RAC demand
 234 response (DR) are now contracting with aggregators who use a whole-home approach. Furthermore, the
 235 complexity of the requirements and testing burden have prevented many high-efficiency products that can
 236 provide grid responsiveness from being certified as connected.

237 The DR criteria proposed in this draft are simplified and eliminate the need for testing. EPA proposes to
 238 simply require compliance with one of the two dominant DR communications protocols. We will no longer
 239 require testing and certification to the protocols, given that the increased expense may discourage
 240 participation by manufacturers. In addition, we assume aggregators that need such certifications will
 241 require it themselves. We may reconsider this choice in the future, based on market conditions. We note
 242 that two commentors on Draft 1 requested we require CTA-2045 for connected recognition. While we
 243 agree that CTA-2045 is an ideal solution for RACs, requiring it is incompatible with recognizing products
 244 currently on the market because none offer it. On the other hand, all currently recognized connected
 245 RACs offer OpenADR, so we are confident specifying one of these two protocols will encourage
 246 standardization without substantially limiting product availability. Further, compliance with all connected
 247 functionality requirements, as specified in Section 4, shall be demonstrated through examination of
 248 product and/or product documentation.

249 EPA also believes that appliance-based or Smart Home Management System (SHEMS)-based price
250 response could be an excellent system for balancing grid needs and consumer needs, with low
251 transaction costs, excellent automated response, considerably flexibility, and manageable consumer
252 impact. We are not including it in this version because the infrastructure and practices that would make it
253 usable are not yet developed.

254 EPA welcomes feedback on these changes and further discussion of the usefulness and achievability of
255 these criteria. EPA asks our partners to share this draft with any aggregators interested in RACs and
256 encourages aggregators to comment and/or reach out to EPA to discuss what they look for in RACs to
257 include in their offerings. As before, connected recognition is optional.

258 The remainder of the criteria, which can provide powerful tools for whole-home energy savings through
259 integration with a SHEMS, have been retained without substantive changes.

260 C. Open Access

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262 To enable interconnection with the product an interface specification, API, or similar
263 documentation shall be made available to interested parties that at a minimum, allows
264 transmission, reception, and interpretation of the following information:

- 265
- 266 ▪ Energy Consumption Reporting specified in Section 4.D (must include accuracy, units, and
267 measurement interval).
- 268 ▪ Operational Status, User Settings & Messages specified in Section 4.F (if transmitted via a
269 communication link).

270 271 D. Energy Consumption Reporting

272 To enable simple, actionable energy use feedback to consumers and consumer authorized
273 energy use reporting to third parties, the product shall be capable of transmitting energy
274 consumption data via a communication link to energy management systems and other consumer
275 authorized devices, services, or applications. This data shall be representative of the product's
276 interval energy consumption. It is recommended that data be reported in watt-hours for intervals
277 of 15 minutes or less, however, representative data may also be reported in alternate units and
278 intervals as specified in the product manufacturer's interface specification or API detailed in
279 Section 4.C.

280 The product may also provide energy use feedback to the consumer on the product itself. On-
281 product feedback, if provided, may be in units and format chosen by the manufacturer (e.g.,
282 \$/month).

283 E. Remote Management

284 The product shall be capable of receiving and responding to consumer authorized remote
285 requests (*not including third-party remote management which may be made available solely at
286 the discretion of the manufacturer*), via a communication link, similar to consumer controllable
287 functions on the product. The product is not required to respond to remote requests that would
288 compromise performance and/or product safety as determined by the product manufacturer.

289 F. Operational Status, User Settings & Messages

- 290 1. The product shall be capable of providing operational / demand response (DR) status (for
291 example: off/standby, energy saver mode, low cool, max cool, delay appliance load,
292 temporary appliance load reduction).
- 293 2. The product shall be capable of providing at least two types of messages relevant to its
294 energy consumption on the product and/or to energy management systems and other
295 consumer authorized devices, services, or applications via a communication link. For
296 example, messages for room air conditioners might include filter change reminders, address
297 performance issues, or report energy consumption that is outside the product's normal range.

298 G. Communication Hardware Architecture

299 Communication with entities outside the Connected RAC System that enables connected

300 functionality (Sections 4.B, 4.D, 4.E and 4.F) shall be enabled by any of the following means,
301 according to the manufacturer's preference:

- 302 a. Built-in communication technology
- 303 b. Manufacturer-specific external communication module(s) and/or device(s)
- 304 c. Open standards-based communication port on the appliance combined with open
305 standards-based communications module
- 306 d. Open standards-based communication port(s) on the appliance in addition to a, b, or c
307 above

308 If option b or c is used, the communication module/device(s) must be easy for a consumer to
309 install and shipped with the appliance, provided to the consumer at the time of sale, or provided
310 to the consumer in a reasonable amount of time after the sale.

311 H. Information to Consumers

312 If additional modules, devices, services and/or infrastructure are part of the configuration required
313 to activate the product's communications capabilities, prominent labels, or other forms of
314 consumer notifications with instructions shall be displayed at the point of purchase and in the
315 product literature. These shall provide specific information on what consumers must do to activate
316 these capabilities (e.g., "*This product has Wi-Fi capability and requires Internet connectivity and a*
317 *wireless router to enable interconnection with an Energy Management System, and/or with other*
318 *external devices, systems or applications.*").

319 **5 TEST REQUIREMENTS:**

320 A. One of the following sampling plans shall be used to test energy performance for certification to
321 ENERGY STAR:

- 322 1. A single unit is selected, obtained, and tested. The measured performance of this unit and of
323 each subsequent unit manufactured must be equal to or better than the ENERGY STAR
324 specification requirements. Note that to determine the represented value per 10 CFR Part
325 429, Subpart B § 429.15, additional testing outside of ENERGY STAR is required. The
326 represented value must also be equal to or better than the ENERGY STAR specification
327 requirements.
- 328 2. At least two units are selected, obtained, and tested. The represented value is calculated
329 from the test results according to the sampling requirements defined in 10 CFR Part 429,
330 Subpart B § 429.15. The represented value must be equal to or better than the ENERGY
331 STAR specification requirements.

332 Results of the tested unit(s) may be used to certify additional individual model variations within a
333 Basic Model as long as the definition for Basic Model provided in Section 1, above, and in 10
334 CFR Part 430.2 is met.

335 B. When testing room air conditioners, the following test method shall be used to determine
336 ENERGY STAR certification:

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Table 5: Test Methods for ENERGY STAR Certification

| ENERGY STAR Requirement | Test Method Reference |
|-------------------------|---|
| CEER | 10 CFR 430, Subpart B, Appendix F OR DOE-approved test procedure waiver pursuant to 10 CFR Part 430.27* |

* DOE understands that various basic models may need a test procedure waiver to show the benefits of various operations pursuant to 10 CFR Part 430.27.

338 C. Compliance with Energy Saver Mode, Filter Reminder, and Installation criteria shall be through
339 examination of product and/or product documentation.

340 **Note:** EPA proposed including sound pressure reporting criteria for Draft 1. While many stakeholders
341 expressed support for this requirement to highlight those models that are “quiet” for consumer benefit,
342 EPA also received concerns regarding the inconsistency in the way that sound pressure testing is
343 conducted across test methods and manufacturers. Therefore, ENERGY STAR will not be requiring
344 sound pressure reporting for ENERGY STAR certification but does encourage identification or
345 development of a consensus industry standard for testing sound to allow fair and consistent reporting.

346 D. Compliance with connected functionality requirements, as specified in Section 4, shall be
347 demonstrated through examination of product and/or product documentation.

348 **Note:** As discussed in Section 4 Connected Product Criteria, EPA is proposing significant changes to the
349 criteria for connected recognition that no longer require testing to the DR test method and, thereby, no
350 longer need an ADRV.

351 E. Significant Digits and Rounding: All calculations shall be carried out as specified in Appendix F to
352 Subpart B of Part 430 and 10 CFR Part 430.23(f). Do not round individual test results. Rounding
353 is specified in 10 CFR Part 429 for the represented value.

354 **6 EFFECTIVE DATE:**

355 A. Effective Date: The ENERGY STAR Room Air Conditioner specification shall take effect on **TBD**.
356 Any product model with a date of manufacture on or after this date shall meet this specification
357 to earn the ENERGY STAR. The date of manufacture is specific to each unit and is the date on
358 which a unit is considered completely assembled.

359 **Note:** EPA is aware that RACs are a seasonal product with specific manufacturing cycles to support an
360 April-August retail sales cycle. EPA intends to finalize the Version 5.0 and Version 6.0 specifications by
361 early 2023 and anticipates Version 5.0 would take effect 9 months later, approximately in October 2023,
362 to be available for the 2024 cooling season. As with other ENERGY STAR specifications, early
363 certification will be available once the specification has been finalized, and thus, early adoption will be
364 available prior to the 2024 cooling season. Following this Draft 2 proposal, EPA will separate the two
365 specifications and pause in the development of Version 6.0 until DOE finalizes the federal minimum
366 standard. At that time, EPA will release a Draft 2 Version 6.0 that is informed by the DOE levels and
367 timing.

368 **7 CONSIDERATIONS FOR FUTURE REVISIONS:**

369 EPA reserves the right to change the criteria should federal requirements, technological and/or market
370 changes affect its usefulness to consumers, industry or the environment. In keeping with current policy,
371 revisions to the specification are arrived at through industry discussions. In the event of a specification
372 revision, please note that ENERGY STAR certification is not automatically granted for the life of a product
373 model.