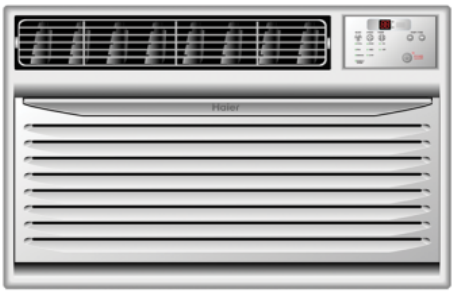
Residential:

# Room Air Conditioners

## Product Information

Residential room air conditioners are mounted in windows or through walls and deliver conditioned air to enclosed spaces. Room air conditioners typically extract heat from the room and vent it outdoors. These products are offered in a broad range of sizes and configurations. They are used in homes, apartments, and commercial settings.



Currently, around 30% of U.S. households use room air conditioners (RACs) to take care of their space cooling needs. Although RACs are sold primarily to the residential sector, approximately 20% of commercial buildings also use this type of cooling equipment.

RAC annual energy consumption is very dependent on house type and climate. As one might expect, RAC energy use is the greatest in large single-family homes located in the southern region of the United States. In total, RACs account for 0.34 quads (0.36 GJ) of residential primary energy consumption or approximately 2% of total residential energy use.

## Current Standard

Residential room air conditioners manufactured and distributed in commerce must meet the energy conservation standards specified in Table 1. The efficiency descriptor for room air conditioners is the energy efficiency ratio (EER), which is a steady-state efficiency rating that is determined by dividing the cooling capacity (in Btu/hr) by the electrical input (in watts).

## Energy Efficiency Standards Information

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|---|---|
| **Docket Number:** EERE–2007–BT–STD–0010 | **Rulemaking Stage:** Completed |
| **For more information, see the** DOE's Appliance and Equipment Standards for this product. | |
| **To see all federal notices, public comments, public meeting transcripts, and supporting documents, see the** Regulations.gov Docket for this product. | |
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## Amended Standard

Compliance with the amended standards shown in Table 2 will be required for products manufactured on or after June 1, 2014. On July 16, 2013 the U.S. Department of Energy (DOE) published a *Federal Register* final rule correcting energy conservation standards for residential room air conditioners. This final rule corrects the direct final rule published April 21, 2011, establishing amended energy conservation standards for residential clothes dryers and room air conditioners. DOE erroneously specified the cooling capacity limits for two product classes of room air conditioners without reverse cycle and with louvered sides. The effective date of this rule is August 15, 2013. Compliance with the standards established for room air conditioners in the final rule is June 1, 2014.

Table 1. Energy Conservation Standards for Residential Room Air Conditioners

| Product Class | Energy Efficiency Ratio |
|---|---|
| | Oct. 1, 2000 to May 31, 2014 |
| 1. Without reverse cycle, with louvered sides, and less than 6,000 Btu/h | 9.7 |
| 2. Without reverse cycle, with louvered sides, and 6,000 to 7,999 Btu/h | 9.7 |
| 3. Without reverse cycle, with louvered sides, and 8,000 to 13,999 Btu/h | 9.8 |
| 4. Without reverse cycle, with louvered sides, and 14,000 to 19,999 Btu/h | 9.7 |
| 5. Without reverse cycle, with louvered sides, and 20,000 Btu/h or more | 8.5 |
| 6. Without reverse cycle, without louvered sides, and less than 6,000 Btu/h | 9.0 |
| 7. Without reverse cycle, without louvered sides, and 6,000 to 7,999 Btu/h | 9.0 |
| 8. Without reverse cycle, without louvered sides, and 8,000 to 13,999 Btu/h | 8.5 |
| 9. Without reverse cycle, without louvered sides, and 14,000 to 19,999 Btu/h | 8.5 |
| 10. Without reverse cycle, without louvered sides, and 20,000 Btu/h or more | 8.5 |
| 11. With reverse cycle, with louvered sides, and less than 20,000 Btu/h | 9.0 |
| 12. With reverse cycle, without louvered sides, and less than 14,000 Btu/h | 8.5 |
| 13. With reverse cycle, with louvered sides, and 20,000 Btu/h or more | 8.5 |
| 14. With reverse cycle, without louvered sides, and 14,000 Btu/h or more | 8.0 |
| 15. Casement-Only | 8.7 |
| 16. Casement-Slider | 9.5 |

Table 2. Amended Energy Conservation Standards for Residential Room Air Conditioners

| Product Class | Combined Energy Efficiency Ratio |
|---|---|
| | Effective as of June 1, 2014 |
| 1. Without reverse cycle, with louvered sides, and less than 6,000 Btu/h | 11.0 |
| 2. Without reverse cycle, with louvered sides, and 6,000 to 7,999 Btu/h | 11.0 |
| 3. Without reverse cycle, with louvered sides, and 8,000 to 13,999 Btu/h | 10.9 |

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|---|---|
| 4. Without reverse cycle, with louvered sides, and 14,000 to 19,999 Btu/h | 10.7 |
| 5a. Without reverse cycle, with louvered sides, and 20,000 to 24,999 Btu/h | 9.4 |
| 5b. Without reverse cycle, with louvered sides, and 25,000 Btu/h or more | 9.0 |
| 6. Without reverse cycle, without louvered sides, and less than 6,000 Btu/h | 10.0 |
| 7. Without reverse cycle, without louvered sides, and 6,000 to 7,999 Btu/h | 10.0 |
| 8a. Without reverse cycle, without louvered sides, and 8,000 to 10,999 Btu/h | 9.6 |
| 8b. Without reverse cycle, without louvered sides, and 11,000 to 13,999 Btu/h | 9.5 |
| 9. Without reverse cycle, without louvered sides, and 14,000 to 19,999 Btu/h | 9.3 |
| 10. Without reverse cycle, without louvered sides, and 20,000 Btu/h or more | 9.4 |
| 9. With reverse cycle, with louvered sides, and less than 20,000 Btu/h | 9.8 |
| 12. With reverse cycle, without louvered sides, and less than 14,000 Btu/h | 9.3 |
| 13. With reverse cycle, with louvered sides, and 20,000 Btu/h or more | 9.3 |
| 14. With reverse cycle, without louvered sides, and 14,000 Btu/h or more | 8.7 |
| 15. Casement-Only | 9.5 |
| 16. Casement-Slider | 10.4 |