

U.S. Department of Energy - Energy Efficiency and Renewable Energy
A Consumer's Guide to Energy Efficiency and Renewable Energy
Ceiling Fans and Other Circulating Fans

Circulating fans include ceiling fans, table fans, floor fans, and fans mounted to poles or walls. These fans create a wind chill effect that will make you more comfortable in your home, even if it's also cooled by natural ventilation or air conditioning. Ceiling fans are considered the most effective of these types of fans, since they effectively circulate the air in a room to create a draft throughout the room.

If you use air conditioning, a ceiling fan will allow you to raise the thermostat setting about 4°F with no reduction in comfort. In temperate climates, or during moderately hot weather, ceiling fans may allow you to avoid using your air conditioner altogether. Install a fan in each room that needs to be cooled during hot weather.

Ceiling fans are only appropriate in rooms with ceilings at least eight feet high. Fans work best when the blades are 7–9 feet above the floor and 10–12 inches below the ceiling. Fans should be installed so their blades are no closer than 8 inches from the ceiling and 18 inches from the walls.

Larger ceiling fans can move more air than smaller fans. A 36- or 44-inch diameter fan will cool rooms up to 225 square feet, while fans that are 52 inches or more should be used in larger rooms. Multiple fans work best in rooms longer than 18 feet. Small- and medium-sized fans will provide efficient cooling in a 4- to 6-foot diameter area, while larger fans are effective up to 10 feet.

A larger blade will also provide comparable cooling at a lower velocity than a smaller blade. This may be important in areas where loose papers or other objects will be disturbed by a strong breeze. The fan should also be fitted to the aesthetics of the room—a large fan may appear overpowering in a small room.

A more expensive fan that operates quietly and smoothly will probably offer more trouble-free service than cheaper units. Check the noise ratings, and, if possible, listen to your fan in operation before you buy it.

When buying window fans, look for the ENERGY STAR® label. Fans that earn the label move air 20% more efficiently, on average, than standard models.