

## Low-Cost Air Cleaners Improve Air Quality



There are many types of air cleaners. This four-speed HEPA air cleaner is so quiet you can barely hear it running on low speed.

Photo by James Dulley



To ask a question, write to **James Dulley**, Energy Report, 6906 Royalgreen Dr., Cincinnati, OH, 45244, or go to [www.dulley.com](http://www.dulley.com).

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*Q. What type of air cleaner is most effective?*

**A.** It can be quite difficult to separate the truth from the advertising hype about the effectiveness of various room air cleaners. The sheer size or price of a specific unit does not necessarily indicate it is effective or efficient. The type of filtering material inside is what is most important.

For the most effective air cleaning, particularly during winter, it is wise to use a high-quality central heat pump/furnace air cleaner along with room air cleaners. Some of the newer central air cleaners are effective, but they remove only the particles that get into the duct system.

When your children plop down on a sofa or walk on the carpet, a cloud of allergen particles rises. Some of these particles are relatively large and settle out of the air before they ever get near the furnace return air registers. An efficient room air cleaner can remove many of these particles using minimal electricity.

Instead of relying on advertising information, use the CADR—clean air delivery rate—rating to compare effectiveness. This rating is determined by testing procedures sanctioned by the Association of Home Appliance Manufacturers. The U.S. Environmental Protection Agency and the American Lung Association recognize the CADR data as accurate and realistic.

The first step is to have your household members tested to determine what airborne allergies they have. The effectiveness of different designs of air cleaners and filtering methods varies depending on what particles you need to remove from the room air.

Three of the most common types of particles in room air are household dust, tobacco smoke and pollen. These cover the size range of most other typical airborne particles. CADR ratings have three

separate numbers that refer to these three particles. You may find an air cleaner that is effective for pollen, but not as effective for tobacco smoke.

For example, an electrostatic air cleaner with washable cartridges is great for tiny smoke particles. There is less air flow resistance through it, so its small fan uses little electricity. A media filter is better for removing larger pollen and mold spore particles. A HEPA filter removes most particles, but its powerful fan uses more electricity. HEPA and media air cleaners require periodic filter element replacements.

When selecting an air cleaner, the CADR indicates the maximum size of room for which the air cleaner will be effective. As a guideline, the CADR rating for the specific particle of interest should be at least two-thirds of the square footage of the room. For example, a 10-foot-by-10-foot room would need a CADR of 67 or greater.

For severe allergies, I prefer a HEPA filter media with a carbon element. A HEPA filter is effective for almost all sizes of common allergens, and the carbon removes odors and chemicals. A thick carbon element is best. Select one with several fan speeds for rapid air cleaning before bedtime and quiet low-speed, more-efficient operation at night.

If your allergy issues are with larger particles, turn off the air cleaner if the room will not be used an hour or more. These larger particles settle back down on furniture and carpeting, and will not be removed to a significant extent with continuous operation.

The following companies offer room air cleaners: Blueair, [www.blueair.com](http://www.blueair.com); Holmes, [www.holmesproducts.com](http://www.holmesproducts.com); Kaz, [www.kaz.com](http://www.kaz.com); LakeAir, [www.lakeair.com](http://www.lakeair.com); and Whirlpool, [www.whirlpool.com](http://www.whirlpool.com). ■