

Cleaner air is relatively easy to come by in homes with a forced-air central heating or cooling system: Simply replace the panel-style filter in the return duct with one that filters more finely. Most drop into place and allow the system to deliver cleaner air throughout the house. One \$15 model we tested, the *3M Filtrete Ultra Allergen Reduction 1250*, was especially good at trapping

dust. You can also buy whole-house air cleaners that use the electronic-precipitator technology found in the best portables.

At about \$400 to \$500, whole-house electronic air cleaners cost roughly the same as the best room versions and deliver similar cleaning performance for the whole house. Free-flowing collection systems help them trap more of the smallest, most irritating particles without restricting airflow as

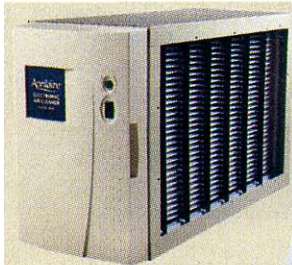
some panel-style filters do. But you will have to pay \$200 or so for the professional installation electronic models require.

THE TESTS, THE RESULTS

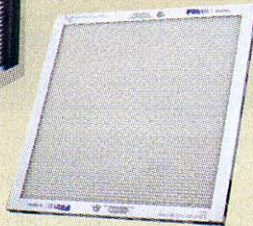
We tested 13 whole-house air filters you can install yourself, along with five models that require professional installation. Three of those five use an electronic precipitator to trap airborne particles, while another—an

Whole-house cleaners

Ratings



Install it yourself:
3M Filtrete Ultra Allergen Reduction 1250, \$15.



Professionally installed:
Aprilaire 5000, \$500.



See how much cleaning you really need. Begin by installing a good pleated electrostatic filter. If your home still has an air-quality problem, consider an electronic model. The best we tested cost \$400 to \$500, plus another \$200 or so for professional installation.

The tests behind the Ratings

Overall score is based mainly on the ability to remove dust and cigarette-smoke particles from a test chamber equipped with ductwork to simulate one room within a multiroom home with forced-air heating and cooling. Scores are based on a model's performance when new. **Technology** denotes the basic types: electronic precipitators, which impart a charge to particles, capturing them on oppositely charged plates or filters; extended-media filters, which are large pleated filters that last about one year; electrostatic filters, which may or may not be pleated and resemble ordinary furnace filters, but have fibers permanently charged to trap small particles; and the pleated and fiberglass filters ordinarily used in ventilation systems. **Dust** and **smoke** scores reflect the ability to clear the air of those particles. **Airflow** reflects how freely each product allows air to pass through. Lower-scoring products tend to impede heating or cooling performance. **Price** is approximate retail. **Annual cost** for replacement filters is based on replacement according to the manufacturer's minimum recommended schedule and is calculated from the suggested retail price. **Most models:** Have no warranty. Have nonwashable filters.

Overall Ratings

Within types, in performance order

Excellent Very good Good Fair Poor

BRAND & MODEL, SIMILAR MODELS IN SMALL TYPE	PRICE	ANNUAL COST OF REPLACEMENT FILTERS	OVERALL SCORE	TECHNOLOGY	DUST	SMOKE	AIRFLOW
			0 P F G VG E 100				
PROFESSIONALLY INSTALLED <i>These can cost \$200 or so to put in.</i>							
Aprilaire 5000 [1]	\$500	\$42	85	Electronic precipitator/Extended media	+	+	+
Carrier AIRA [1][2]	500	Washable	80	Electronic precipitator	+	+	+
Trion SE1400 [1]	400	Washable	75	Electronic precipitator	+	+	+
Honeywell F50 [1][2] F300	400	Washable	70	Electronic precipitator	+	+	+
Aprilaire 2200 [1] 2400	275	28	65	Extended media	+	+	+
INSTALL-IT-YOURSELF <i>These simply replace your existing filter.</i>							
3M Filtrete Ultra Allergen Reduction 1250	15	60	95	Pleated electrostatic	+	+	+
Precisionaire NaturalAire Microparticle	8	30	90	Pleated electrostatic	+	+	+
3M Filtrete Micro Allergen Reduction 1000	14	56	85	Pleated electrostatic	+	+	+
3M Filtrete 600	10	40	80	Pleated electrostatic	+	+	+
Puralator PuroPleat Ultra (PPD)	5	21	75	Pleated electrostatic	+	+	+
American Air Filter Dirt Demon UltraPleat	8	31	70	Pleated electrostatic	+	+	+
Precisionaire NaturalAire	5	20	65	Pleated	+	+	+
American Air Filter Dirt Demon Pleated	5	20	60	Pleated	+	+	+
Precisionaire EZ Flow	1	11	55	Fiberglass	+	+	+
American Air Filter StrataDensity Premium	1	11	50	Fiberglass	+	+	+
Puralator PuroPleat (Pur 40)	5	20	45	Pleated	+	+	+
American Air Filter ElectroKlean [1]	25	Washable	40	Electrostatic	+	+	+
The Web Plus [1] The Web	20	Washable	35	Electrostatic	+	+	+

[1] Warranted for two or more years. [2] Available in various sizes.

extended-media filter—relies on a thick ruffle of pleated fabric. The *Aprilaire 5000* combines both technologies.

All were tested in the 200-square-foot sealed chamber we used for portable units, but with ductwork to simulate a room in a home with forced-air heating or cooling. Most tested models measure 20x20 inches, but our results should apply to other sizes.

Four pricey performers—and one that's overpriced. All four electronic models were 30 times more effective overall than conventional fiberglass furnace filters. As with room air cleaners, these whole-house versions were especially adept at trapping the smallest particles.

By contrast, the \$275 *Aprilaire 2200*, with

its extended-media filter, removed smoke particles no better than the best \$8-to-\$15 panel filters. Like those, it was some 10 to 15 times as effective on dust as a conventional furnace filter, however.

When static is good. Electrostatically charged fibers, which help attract dust particles, are another weapon against dust. Pleated filters made from those fibers were more effective than filters without an electrostatic charge.

RECOMMENDATIONS

You don't have to spend more than a few dollars to make a noticeable improvement in your home's air quality. So start by thinking about how large a problem you have.

► Consider an electronic-precipitator model if someone in your home smokes or has a chronic breathing problem. Of the four we tested, the *Aprilaire 5000* and *Carrier AIRA*, each \$500, and *Trion SE1400*, \$400, performed best. While the *Aprilaire's* disposable filter saves you the usual hassle of washing an electronic model's collection plates, it also adds \$42 to the annual maintenance cost.

► For more modest needs, consider one of the install-it-yourself models we tested. The *3M Filtrete Ultra Allergen Reduction 1250*, \$15, scored highest, but any model rated good would be a fine choice. While only fair at trapping small particles like smoke, the *Ultra Allergen Reduction* is the first non-electronic filter to excel in our dust tests. ©