

# The Clean Air CADR & Purifier Guide

How to size a HEPA air cleaner with the two-thirds CADR rule, the MERV filter ladder for your HVAC system, the ozone and ioniser warning, and a room-by-room sizing worksheet — so you buy filtration, not marketing.

- 2/3 CADR sizing rule
- MERV filter ladder
- True-HEPA definition
- Ozone/ioniser warning
- 3-page A4 printable PDF

## CLINICAL RATIONALE — WHY THIS SPECIFIC TOOL

Fine particulate (PM2.5) is the indoor pollutant with the strongest and most consistent health signal, and it is the one filtration removes best. The two engineering questions are how much clean air a device delivers (CADR) and whether your HVAC filter is dense enough (MERV).

**CADR is the honest number.** Clean Air Delivery Rate states, in cubic feet per minute, how much air a purifier actually cleans of smoke, dust and pollen. The AHAM rule of thumb: CADR should be at least two-thirds of the room's area in square feet.

**True HEPA is a standard, not an adjective.** "HEPA-type" and "HEPA-style" are marketing. True HEPA removes at least 99.97% of particles at 0.3 µm. If the box will not say "true HEPA" or H13, it is not the thing.

**Avoid the machines that add pollution.** Ozone generators and some ionisers deliberately emit ozone, a lung irritant, and are the one category regulators warn against. A purifier should only remove; check it is CARB-certified or explicitly ozone-free.

| AUTHORITY / EVIDENCE BASE | WHAT IT ESTABLISHES FOR THIS TOOL                                                                       |
|---------------------------|---------------------------------------------------------------------------------------------------------|
| AHAM two-thirds rule      | A room air cleaner's CADR should be at least two-thirds of the room area in square feet.                |
| HEPA standard             | True HEPA captures at least 99.97% of 0.3 µm particles; MERV 13 is the HVAC-grade equivalent for homes. |
| CARB / EPA ozone guidance | Ozone generators and ozone-emitting ionisers are warned against; ozone is a respiratory irritant.       |

## QUICK START — THE NEXT TEN MINUTES

- 1

**Measure the room**  
Length times width in feet. Multiply by two-thirds; that is the minimum CADR in cfm.
- 2

**Check the label for true HEPA**  
True HEPA or H13, a stated CADR, and no ozone/ioniser mode. Three checkboxes, no exceptions.
- 3

**Put the first unit in the bedroom**  
You spend a third of your life there; the bedroom is the highest-value room to clean.
- 4

**Run it continuously on low**  
A purifier that is off is a filter display. Continuous low is quieter and cleans more than bursts on high.

### THE ONE CATEGORY TO REFUSE

Do not buy an ozone generator, "ozonator", or any device that advertises ozone or deliberately emits it, and be cautious with ionisers unless certified ozone-free (CARB). Ozone is a lung irritant that worsens asthma and COPD; no amount of "it smells like a thunderstorm" justifies emitting it indoors. Ventilation and HEPA remove pollutants without adding one.

## THE THREE NON-NEGOTIABLES ON ANY LABEL

### 1 · True HEPA

The box says "true HEPA" or H13 — 99.97% at 0.3 µm. "HEPA-type" is not it.

### 2 · A stated CADR

A cfm number for smoke, dust and pollen, matched to your room by the 2/3 rule.

### 3 · No ozone mode

No ozonator, no ioniser emitting ozone; CARB-certified or explicitly ozone-free.

## FILTRATION IS ONLY HALF OF VENTILATION

A purifier cleans particles; it does not add oxygen or remove CO2. Stuffy, stale air is a ventilation question — open windows when outdoor air is good, run extraction in kitchen and bath, and let the purifier own the particles. The two systems are complementary, not competing.

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THE ARITHMETIC

Size by the 2/3 rule, then match the HVAC filter

Find your room area, read the minimum CADR, and confirm the purifier is true HEPA with no ozone. Then check what your furnace is wearing.

MINIMUM CADR BY ROOM SIZE

| ROOM (FT) | AREA | MIN CADR | TYPICAL ROOM          |
|-----------|------|----------|-----------------------|
| 10 × 10   | 100  | 65+      | Small office, nursery |
| 12 × 12   | 144  | 96+      | Standard bedroom      |
| 14 × 14   | 196  | 131+     | Large bedroom         |
| 16 × 16   | 256  | 171+     | Living room           |
| 20 × 20   | 400  | 267+     | Open-plan living      |

CADR in cfm should be at least two-thirds of room area in square feet. For smoke events (wildfire), size up and run on high with the door closed.

THE MERV LADDER FOR HVAC

| FILTER  | CAPTURES                           | FIT                                                                 |
|---------|------------------------------------|---------------------------------------------------------------------|
| MERV 8  | Pollen, dust mites, larger dust    | Basic residential default; limited for fine particles.              |
| MERV 11 | Adds finer dust and some smoke     | A step up if your system tolerates it.                              |
| MERV 13 | Fine particles incl. much of PM2.5 | The home target; confirm your HVAC can take the airflow resistance. |

Higher MERV means more airflow resistance — confirm your system is rated for MERV 13 before you fit it, or change the filter more often rather than forcing a denser one.

ROOM-BY-ROOM SIZING WORKSHEET

| ROOM    | L × W (FT) | AREA | MIN CADR (2/3) | PURIFIER CHOSEN | FILTER CHANGE |
|---------|------------|------|----------------|-----------------|---------------|
| Bedroom |            |      |                |                 |               |
| Living  |            |      |                |                 |               |
| Office  |            |      |                |                 |               |
|         |            |      |                |                 |               |

REFUSE THE OZONE CATEGORY

Ozone generators and ozone-emitting ionisers add a lung irritant to the room they claim to clean, and are the category regulators warn against — especially with asthma or COPD in the house. A purifier should only remove. If it advertises ozone, put it back.

Placement and running

Bedroom first; keep a foot of clearance around the inlet; door closed while running; continuous on low beats bursts on high. In wildfire season, run on high in the sealed bedroom and check the room's own PM2.5 monitor, not the outdoor one.

Filters are the consumable

A saturated HEPA filter cleans nothing. Note the install date on the frame, replace on the maker's schedule (typically 6–12 months), and vacuum the pre-filter monthly. The worksheet's "filter change" column is the habit that keeps the machine honest.

# Ready for the Complete Step-by-Step Blueprint?

This buyer's guide gives you the immediate tools to take action today. But long-term health requires a complete, structured daily system — one that tells you **what to do on the days this sheet does not cover**, in what order, and how to adjust when your body does not respond the way the chart says it should.

## HEALTH SECRETS

### Healthy Home Air Quality Audit

A room-by-room indoor air audit for particulates, moisture, mold and chemicals, plus a wildfire clean-room plan.

Household Binder Series · 28 pages · A4 print + fillable

## Healthy Home Air Quality Audit

Identify indoor particulate, moisture, mold, and chemical risks room-by-room.

28 pages

Room Walkthrough + Wildfire Card

Household Binder Series

\$19 one-time

### WHAT IS INSIDE THE FULL EDITION

- 1 The room-by-room checklist** — particulates, moisture, mould and chemical sources audited room by room.
- 1 The wildfire clean-room plan** — build one sealed, filtered refuge room before smoke season, not during it.
- 1 The MERV / CADR filtration matrix** — which filter where, from furnace to purifier to car.
- 1 Humidity and CO2 targets** — the two numbers that govern mould and stale-air sleep.

### THIS FREE TOOL VERSUS THE COMPLETE SYSTEM

#### What this free buyer's guide already gives you

- ☐ The 2/3 CADR sizing rule and table
- ☐ The MERV ladder and true-HEPA definition
- ☐ The ozone/ioniser warning

#### What only the 28-page edition has

- ☐ A full room-by-room pollutant audit
- ☐ A wildfire clean-room plan, built in advance
- ☐ Humidity, CO2 and moisture control targets
- ☐ The whole-home filtration matrix

## Get the Complete Guide

AT [HEALTHSECRETS.COM/PRODUCTS/HEALTHY-HOME-AIR-QUALITY-AUDIT](https://healthsecrets.com/products/healthy-home-air-quality-audit)

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