



Blast Brothers Manual

smartair.taobao.com
smartairfilters.com

Smart Air is a B-Corp certified social enterprise that that promotes cost-effective, data-backed air filters as a solution to indoor particulate air pollution. Smart Air provides open-source test data and hosts workshops across Asia to teach people how to protect themselves from air pollution.

Smart Air has been covered by the BBC, Forbes and CCTV. We've run over 300 educational workshops educating 10,000 people. And have over 5,000 hours of test data and research in our air pollution knowledge base. Since our launch we've shipped over 40,000 simple and effective purifiers across 27 countries.



A message from the founder Thomas:

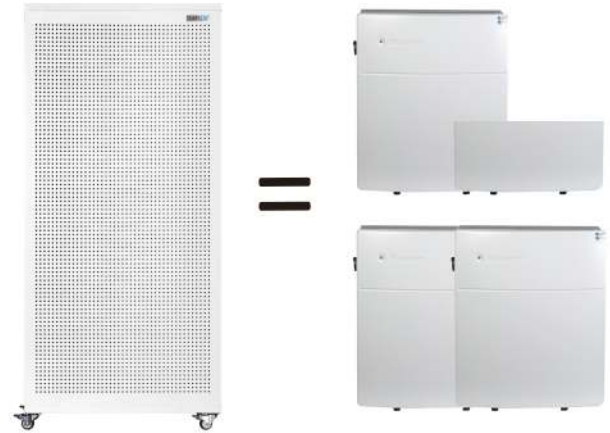
In 2013, I was living in Beijing and needed a purifier to fight the airpocalypse. I went out to buy one only to find that purifier companies were charging crazy high prices for simple technology. After some research, I discovered all air purifiers are just fans and filters, and don't need to cost thousands. That's when Smart Air was born.

I hope you enjoy your Smart Air purifier. It looks simple, even primitive, but it works. And because it works, your Smart Air is a message to the world that clean air in your home doesn't need to cost crazy amounts of money.

Your lungs will have a Blast

We measured the Blasts' clean air delivery rate (CADR) in our Beijing lab, and compared them against the Blueair and IQ Air. The results are clear: the Blasts give way more clean air.

All our data is available online at smartairfilters.com/blasts



1 Blast = 3.4 Blueair 203's

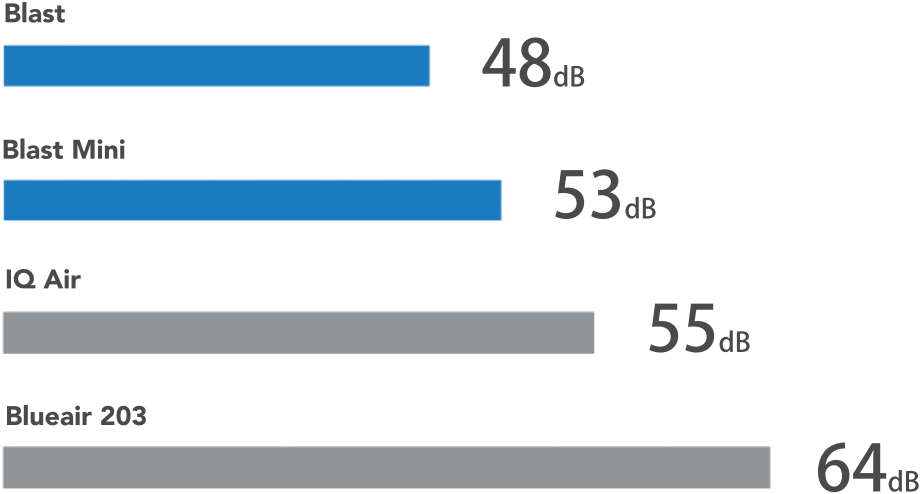


1 Blast Mini = 2.2 Blueair 203's

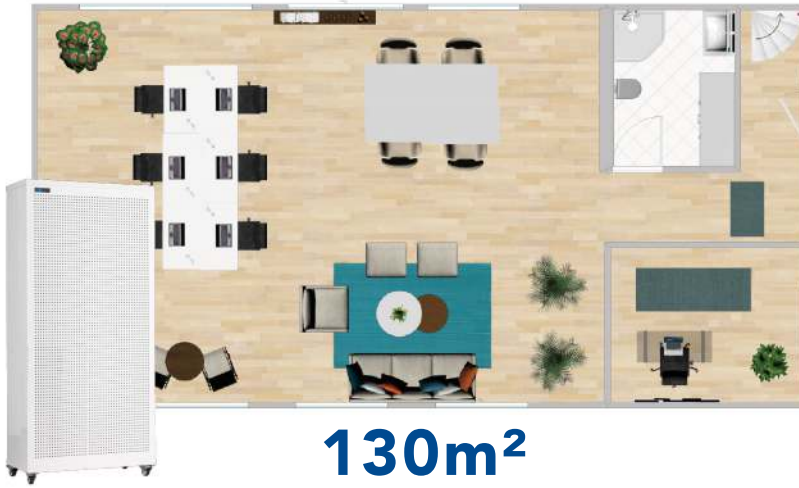
(Blueair data from AHAM official website)

Its quieter too

Well if it's more powerful than 3 Blueair's, it must be loud as heck, right?
It's actually quieter. Think of it as the strong, silent type.



Let's talk about size



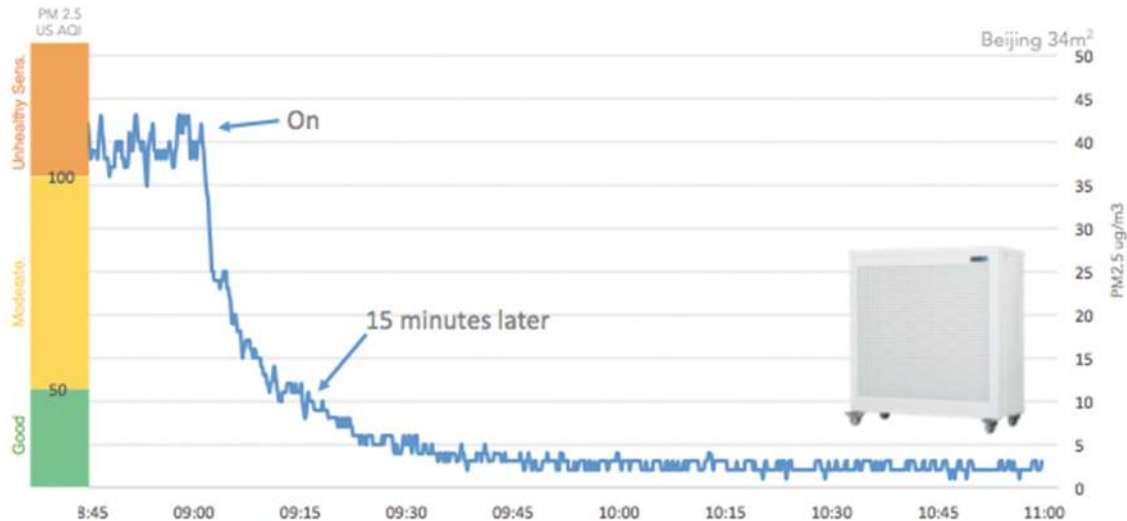
With this kind of muscle, the Blast can cover big apartments, offices, or gyms. (Or run it on low in a normal apartment, and you'll have the quietest clean air on the block.)



The Blast Mini, at half the size of the Blast, is ideal for normal-sized apartments with about 4 rooms.

Place your Blast at least 15cm away from the wall for maximum air flow.

Room test



Thomas tested the Blast Mini in Smart Air's Beijing office when the team was at work to see how quickly it could clean the air. The Blast Mini was turned on low, and people were coming and going after we turned it on at 9am.

After 25 minutes, the Blast Mini kept the PM2.5 levels in the office below 5µg/m³. That's half the WHO recommended level.

How about that power usage?

You'd think that with a fan that big, and for that much clean air, the Blasts would use a lot of energy. We've used a motor from Taiwan to keep that energy usage down and your energy bills lower.

Blast Mini



Blast



IQ Air



Blueair 203



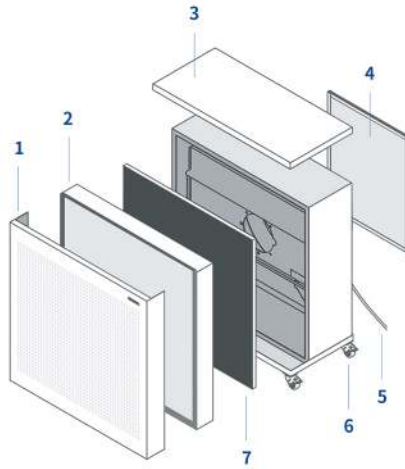
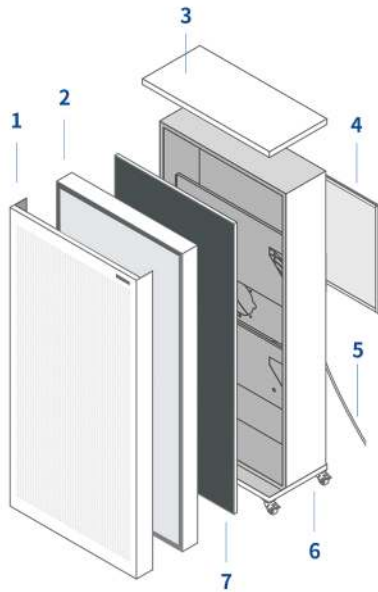
Over 200 tests conducted

All right, all right, we staged this photo. But aerodynamics engineer Paddy really did run over 200 tests on noise, particle capture, wind speed, and power usage. That's how it can be so strong and yet quiet. Our website has days and days of raw room test data for the nerd curious!

Find out more at [smartairfilters.com](https://www.smartairfilters.com)



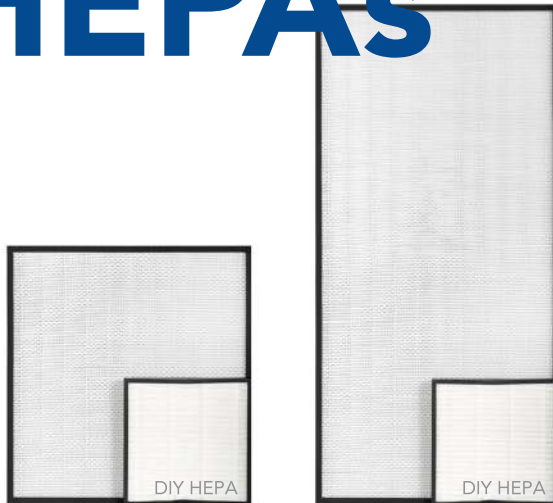
What's inside a Blast?



- 1 Front plate
- 2 HEPA filter
- 3 Top plate
- 4 Pre-filter
- 5 Power cable
- 6 Lockable wheels
- 7 Carbon filter (sold separately)

Purifier companies can make obscene profits when most people don't understand how purifiers work. Here's the honest truth: a purifier is fan + a filter. In this case, that fan and filter are just really big.

Tell me about your HEPAs



Our DIY HEPA filters are tiny in comparison.
They won't fit your Blasts!

We tested over 10 different HEPA materials before deciding on using an H13, 99.95% HEPA filter. That means it can capture 99.95% of those particles above (and below) 0.3 microns!

Can I wash a dirty HEPA filter?



Unfortunately not. We ran experiments to test this. Find out more at smartairfilters.com/blog/hepas-washable/

We know that buying new HEPA filters is a significant recurring cost, so we do our best to keep prices low.

Filters can be purchased through smartair.taobao.com or smartairfilters.com/shop

How often should I change the HEPA?

We tested a HEPA in real Beijing air for 200 days to get a sense of how long HEPA's last in real Beijing air. Based on that data, Paddy estimated the HEPA lifespan for the Blasts. These estimates for the Blasts are for 8 hours of use every day. If you use it more or less, you can calculate lifespan using the total number of hours below.

| | High speed setting | Low speed setting |
|-------------------------------------------------------------------------------------------------------------------|---------------------------------|---------------------------------|
|  Room size: 130m ² | 19 months 4,600 hours | 22 months 5,250 hours |
|  Room size: 85m ² | 12 months 2,900 hours | 13 months 3,100 hours |

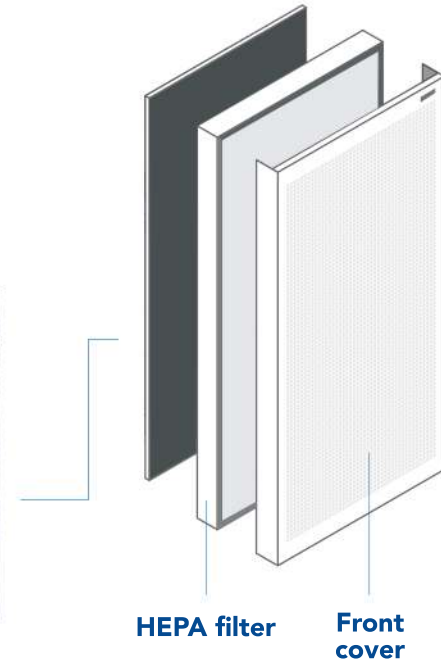
Blast formaldehyde too

HEPAs are great at capturing particles, but we'll need a carbon filter if we want to capture gas pollutants. Carbon has been proven to reduce gas pollutants including benzene, formaldehyde, VOCs, ozone, and odors.

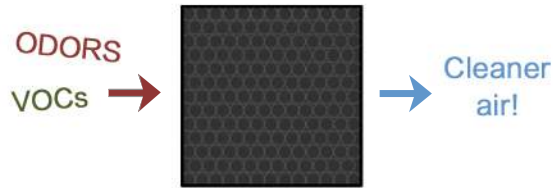
If you ordered a carbon filter, it slots into the HEPA frame and sits between the fan and the HEPA.



Carbon filter close up



What is activated carbon?

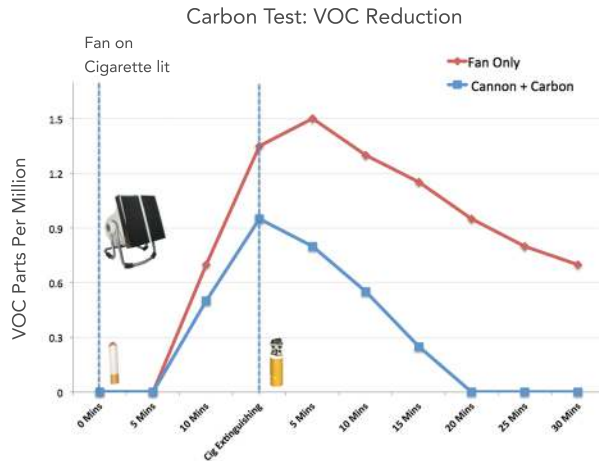


Carbon filters don't do a good job at filtering PM2.5, but they can help filter out odors and some harmful gases like VOCs

Does activated carbon really work?

We ran tests with an Industrial Scientific MX6 iBrid gas detector. In an enclosed 4.14m² porch, we lit three cigarettes (known to emit formaldehyde and benzene), turned on a Cannon fan with a carbon filter, and tracked VOC concentration.

The results (left) showed the carbon layer effectively reduced VOC concentrations.



In tests with a carbon filter attached to the Cannon, the carbon effectively removed VOCs in the room.

Does everyone need a carbon filter?

Not necessarily. Not all homes have dangerous levels of harmful gases or VOCs that would call for a carbon filter.

VOCs are more common in homes with recent renovation or repainting, smoke. Other offensive odors, or near a source of gas pollution like a factory.

Turn on your Blast



1. Your Blast comes with a surge protector cable. Safety! The other end of the cable goes into the back of Blast here. It's next to the pre-filter.



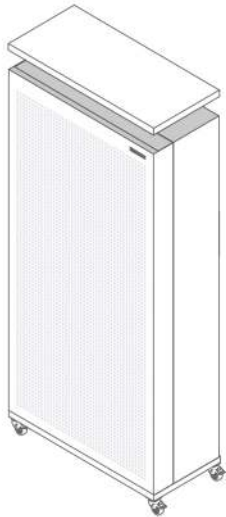
2. Plug this in and press the big green button. You should see the light illuminate.



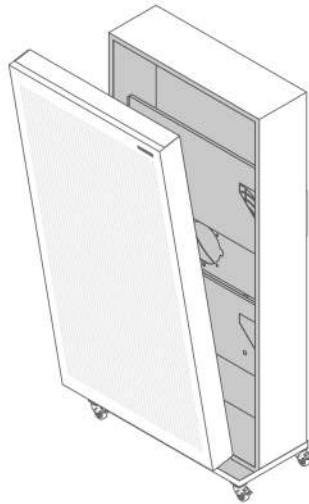
3. For speeds, we kept things simple. The Blast has a single dial with 3 speeds. 0 is off. Turn it to the right (clockwise) for maximum clean air.

Time to change the HEPA?

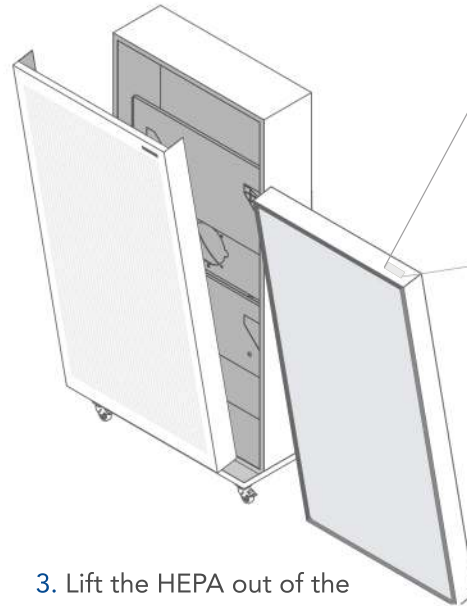
You'll only need to change it every 7-20 months, but we still tried to keep things simple.



1. Lift off the top lid. It might be a little tight, so use those muscles!



2. Pull the front cover up and out, then take it out.



3. Lift the HEPA out of the front cover, and replace it with your new one.



Take note of the arrow on the HEPA, it shows which way round the filter should face.

Simple Housekeeping

Cleaning the mesh pre-filter will extend the lifespan of the HEPA filter. Here's how.



1. Unscrew the screw on the top and the 3 sides of the pre-filter.



2. Slide the pre-filter up and out. You can wash it with a damp cloth or water. Make sure it's dry before putting it back.

⚠ Remember to remove the power cable before removing or washing the pre-filter or opening up your Blast! ⚠

FAQ

Can I turn off the purifier when I sleep?

Even in a room with the doors and windows closed, our tests found that particulate levels increase very quickly after you turn off your purifier. Even though we can't see it, dirty air is entering our homes constantly. We recommend keeping the purifier on while you sleep, or whenever you want to breathe clean air in your home.





What's the pre-filter for?

The pre-filter filters out larger particles. This stops the HEPA from getting clogged up by the big stuff and increases its lifespan.

I received a damaged fan or filter. What should I do?

We do our best to package the Blasts safely before shipping, but sometimes they get damaged during shipment. Argh, it frustrates us too! If you receive a broken fan or filter, send an email to Esther at info@smartairfilters.com and let us know what happened.

Smart Air Family

| |  |  |  |  |
|-----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Room size (m ²) | 15 | 30 | 85 | 130 |
| Noise level (dB) | 47-55 | 53-61 | 44-52 | 38-48 |
| Dimensions (mm) | 412*363*79 | 348*363*330 | 625*576*330 | 1230*580*320 |
| CADR (m ³ /hr) | 94 | 132 | 585 | 890 |
| Filter types | HEPA | HEPA + Carbon* | HEPA + Carbon* | HEPA + Carbon* |
| HEPA lifespan | 1000 hrs (4 months) | 750 hrs (3 months) | 12-13 months | 19-22 months |
| HEPA dimensions (mm) | 296*296*23 | 296*296*23 | 570*570*69 | 1170*570*69 |
| Weight (kg) | 1.55 | 5.4 | 26 | 38 |
| Power Usage (W) | 36 | 65 | 82 | 88 |

*Carbon filter optional. Not everybody needs a carbon filter, read up on VOCs to learn if you need one: smartairfilters.com/knowledge-base



**Who
the heck
is Smart
Air?**



Thomas Talhelm

Thomas built his first DIY in Beijing doing PhD research in cultural psychology. Since then, he managed to get a job as a professor at the University of Chicago, and he studies cultural differences between northern and southern China.



Anna Guo

Anna helped Thomas assemble his first DIY air filter in 2013. Now she runs tests, orders materials, and manages team projects for Smart Air. In her spare time, Anna enjoys photography, yoga, tea, and French film.



Paddy Robertson

Paddy is a graduate in aero engineering and a jack of all trades. He manages the China business and leads product development. Outside of the office he'll be climbing or trying to fit in with the locals doing Tai Chi.



Hailian Hao

Hailian manages the Smart Air online sales and customer service. Away from the office she enjoys making all manner of things sweet and tasty, sometimes bringing them along to the office if we're lucky.



Esther Wang

Esther is Smart Air China's customer service lead. Prior to the recent epidemic of babies in her life, she enjoyed music, dancing, traveling, and ultimate frisbee, and she hopes to enjoy them again someday.



Julian Fox

Julian helps grow Smart Air's international and domestic partnerships. He studied international relations in university and considers himself an expert on all things chocolate.



Sun Lina

Lina joined after completing her postgraduate study of Sustainable Development at Uppsala University in Sweden. Lina likes scuba diving, bouldering, and exploring remote places globally.



Jia Wen

Jiawen recently graduated from Communication University of China. She handles our social media communications. Outside of work, she enjoys studying foreign languages, traveling, biking, Chinese calligraphy, and sketching.

Clean air should not be a luxury



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Certified



Corporation