Twitter Thread by Derrick VanGennep



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I recently bought one of these air quality monitors and got to take it out for some measurements!

I'll share some findings in this thread.

CCing @CO2Guerrillas here, in case they would like to share.



Roll over image to zoom in

Aranet4 Home: Wireless Indoor Air Quality Monitor for Home, Office or School [CO2, Temperature, Humidity and More] Portable, Battery Powered, E-Ink Screen, App for Configuration & Data History

Brand: SAF

4.5 out of 5 stars 36 ratings | 7 answered questions

Currently unavailable.

We don't know when or if this item will be back in stock.

- Precisely monitors indoor air quality - CO2, Temperature, Relative Humidity and Atmospheric pressure in Real-Time
- Visual and Sound Warnings when CO2 concentration gets too high
- Power-efficient E-Ink display ensures super long battery life for this wireless device (up to 2 Years)
- Smartphone app for historical data viewing (supports iPhone and iPad with iOS 12 or later, Android devices with Nougat 7.0 or later, compatible with Bluetooth 4.1 or later)
- Uses non-dispersive infra-red sensor (NDIR) technology for most precise CO2 measurements

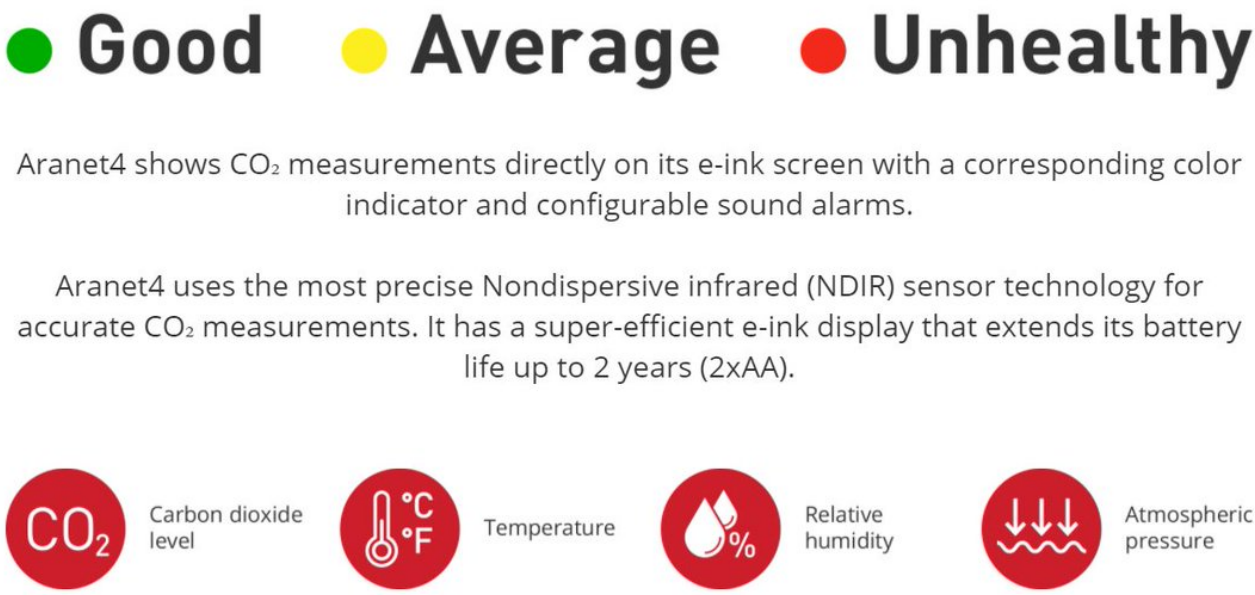
A very quick intro:

This device measures:

-CO2 concentration
-relative humidity
-atmospheric pressure
-temperature

I spent ~$200 on Amazon. It pairs with your phone and you can watch data come in every minute or so.

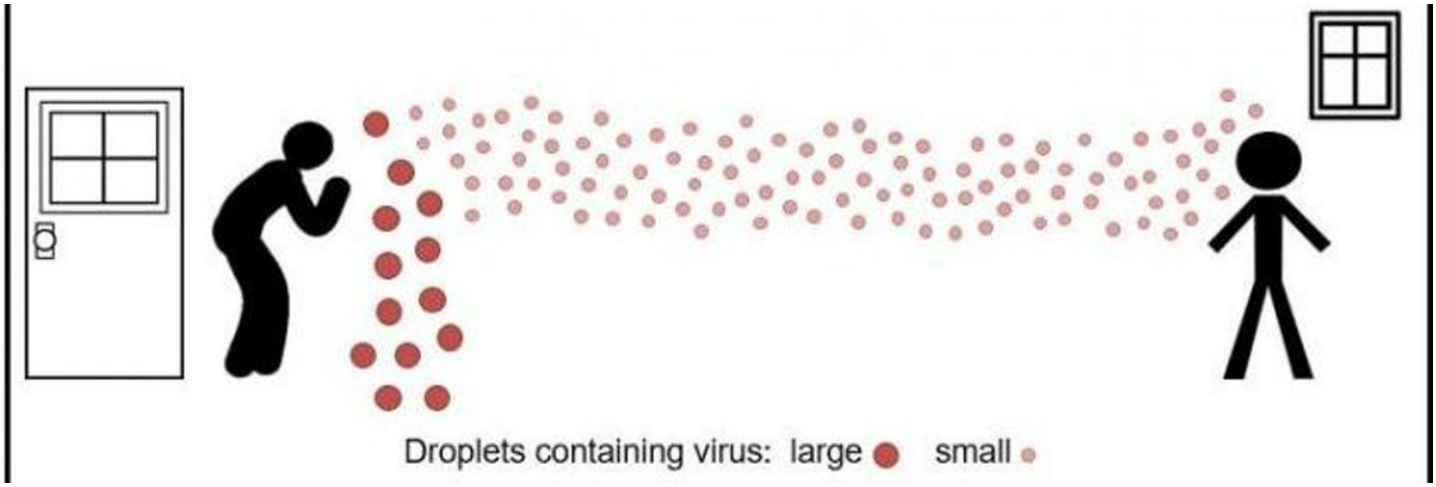
https://t.co/aoXjyq8kdu



A lot of covid transmission is airborne. So, having clean air is a must for reducing transmission.

A great way to see how much clean air you are getting is to measure CO2 concentration.

Too high -> you could use more ventilation -> open some windows!



So, I walked around town and took some measurements.

Outdoor CO2 concentration should be about 400 ppm. I haven't calibrated my device yet, so I measured ~470. Close enough.

<800 is good for indoors. Something like 2000 is very bad.

https://t.co/oZAkVnr9ts



For a reference: inside my apartment I quickly get ~1000 ppm if I don't have windows open. Maybe ~1500 if things get bad.

If I crack some windows, even just barely, it gets down to ~600 ppm very quickly, and my heater can keep the apartment ~70 F no problem.

First stop: a small shop in Harvard Square. It is about 60 ft long, 20 ft wide, and usually has ~3 people in there.

CO2: 937 ppm.

Not great, not horrible. Surprisingly (to me), this place had the highest CO2 on my trip. It did have a purifier, which was nice.



Next stop: a very similar store, but it has less business and only ~1 person in there most of the time.

~700 ppm. Still good.



Plant shop around the corner, which was a bit larger in size, maybe 2-3x, but also maybe ~4 people in there on average.

650 ppm. Not bad!

Fun fact: this shop is 103 years old now.



Next stop was interesting: a paper store that was split into two completely separate rooms. Both the same size, and both had ~2 people in there. One had the AC blasting, the other had it off.

Basically the same results in both: 650-700 ppm



Next stop, a 2-floor CVS which is usually pretty busy. Picked a spot near the center of the store:

620 ppm. Still not bad!

The doors open often, and the AC was on.



Next stop was the Harvard bookstore.

560 ppm.

Very nice! Especially since my device reads ~470 outside.

Took this sample in the essential ideology section.



I was skeptical about the low values, so I went to another section (science books now).

520. Still good!

The whole store had their AC up very high. I could see many of the signs shaking due to airflow inside. I assume they were piping in outdoor air.



Overall, I was impressed with most places! I expected worse, but I also didn't go into any of the more dangerous areas, like restaurants (we still have indoor dining in Boston).

A side note: CO2 concentration is just a proxy for air quality. Not perfect, and many other things matter too.

Follow these people instead of me to get some real science:

@kprather88 @jljcolorado @ShellyMBoulder @CO2Guerrillas @jksmith34