

ATMO[®]
T U B E

PRO

Reviewer's Guide



What is Atmotube Pro?

Atmotube PRO is our most advanced solution for both indoor and outdoor air quality tracking.

Atmotube PRO is a wearable, portable device that continuously monitors air quality in real time and alerts you when it gets unsafe.

Atmotube PRO tracks Volatile Organic Compounds (VOCs), just like Atmotube Plus, but also detects PM1, PM2.5, and PM10 pollutants, such as dust, pollen, soot, and mold.



**VOLATILE ORGANIC
COMPOUNDS**



**PARTICULATE
MATTER 1µg**



**PARTICULATE
MATTER 2.5µg**



**PARTICULATE
MATTER 10µg**



HUMIDITY



TEMPERATURE



**ATMOSPHERIC
PRESSURE**



ALTIMETER



Why care about PM and VOCs in the air?

The average person takes over 20,000 breaths per day. Most of the time, we never think about WHAT we breathe in and how air quality affects our bodies.

Office equipment, paints and lacquers, cleaning supplies, and furnishings often emit Volatile Organic Compounds (VOCs). These gases can have adverse short and long-term health effects on our respiratory systems. Over time, exposure to VOCs has been linked to an increased risk of heart disease, stroke, liver and brain damage, and even cancer.

Particulate matter is a mixture of tiny particles and droplets made up of dirt, dust, soot, smoke, and liquid compounds that pollute the air. The ingredients can vary by season (for

example, soot and smoke from wood fires, which are more common in winter, are a source of particulate matter).

When you inhale particle matter, it can harm your lungs, especially if you already have chronic lung disease or asthma. Particulate matter can even cause heart attacks, lung cancer, and low birth weight in babies. Exposure to this type of air pollution often leads to eye and throat irritation.

Particle matter typically consists of nitrates, sulfates, organic chemicals, metals, and soil or dust particles.

With Atmotube PRO, you can easily monitor the air you breathe and take steps to mitigate dangerous exposure before it's too late.



How do particles affect the human body?

We're sure you have heard about air pollution. It's a major issue worldwide today and is mostly caused by very small particles in the air known as particulate matter (PM)

Particulate Matter (PM), also known as soot, is made of microscopic solid particles or liquid droplets that are either emitted directly into the air or formed by pollutants that combine in the atmosphere. PM is usually measured in three size ranges, which are the most harmful to health: PM10, PM2.5, and PM1.

PM10 or coarse dust particles refer to particles with a diameter less than or equal to 10 microns in size. They are about 30 times smaller than the width of a human hair and are small enough to evade our defensive nose hairs and get inhaled into our lungs. Sources of this PM10 include crushing/grinding operations, and dust stirred up by vehicles. Pollen, mold, and plant and insect particles are also considered PM10. Finally, the evaporation of sea spray can also produce large particles in coastal areas.

Dangerous level: 125 µg/m³ (microgram per cubic meter) or more.

PM2.5 or fine particles are 2.5 micrometers in diameter or smaller. Fine particles are produced from all types of combustion, including motor vehicles, power plants, residential wood burning, wildfires, agricultural burning, and some industrial processes. While PM10 ends up in your lungs, PM2.5 is more dangerous as it can transfer from your lungs into your bloodstream. From your bloodstream, it can end up anywhere in your body, thereby making it "**the invisible killer**".

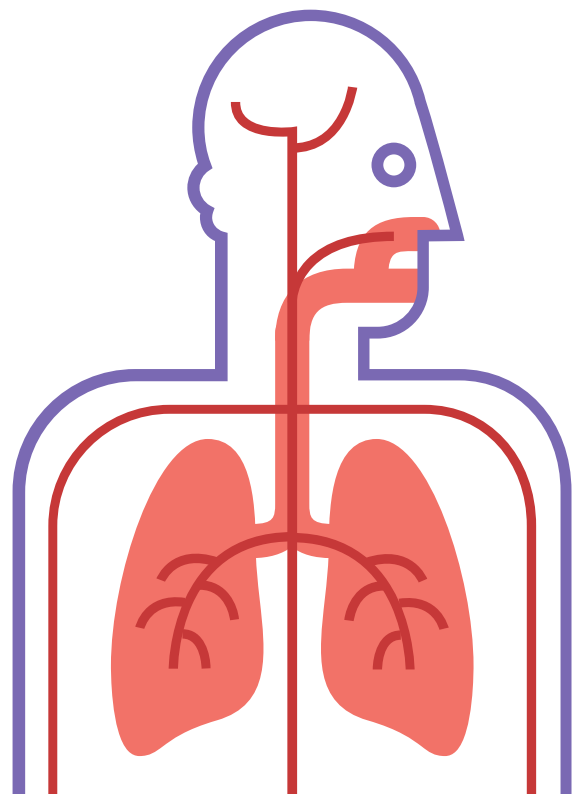
Dangerous level: 90 µg/m³ or more.

PM1 – particulate matter with a diameter smaller than 1 micron – is a major subset of PM2.5. These are extremely fine particles that are even more likely to reach

deeper into the respiratory system than PM2.5. PM1 is the by-product of emissions from factories, vehicular pollution, construction activities, and road dust. It is not dispersed and stays suspended in the air that you breathe.

Dangerous level: 61 µg/m³ or more.

**THE SMALLER THE PARTICLES,
THE MORE DANGEROUS THEY ARE**



Atmotube: a closer look



CARABINER MOUNT

Elegant and functional solution for carabiner clip

RGB LED

Multicolored LED shows different statuses of Atmotube PRO

BUTTON

The button gives you an opportunity to see current Air Quality Score indication on the LED

AIRFLOW MESH

This is where Atmotube PRO gets the Air from



On-device notification

The color of Atmotube's LED indicates the current Air Quality Score (AQS), from red (extremely poor) to blue (very clean). Press the button once and the LED will show the current AQS.

- **GOOD**
- **MODERATE**
- **POLLUTED**
- **VERY POLLUTED**
- **SEVERELY POLLUTED**

Setting up Atmotube PRO

- 1 Connect Atmotube to any USB power source with the supplied USB Type-C cable. The orange LED means Atmotube is turned on and charging.

Atmotube start measuring 4 minutes after it's turned on.

Note: Atmotube is fully charged once the LED changes from orange to green.



- 2 Install the Atmotube app. It's free on the Google Play store. For iOS: please download the most recent App from TestFlight (<https://testflight.apple.com/join/sx-8i8780>) to ensure you have access to all the latest features.

It supports devices running iOS 9+ and Android 4.3+ with Bluetooth LE support.

Download to Android



Download to iOS (TestFlight)



NB. Please note that this is still an engineering sample. Something can go wrong. If your device is not responding - please press and hold the button for 10 seconds until the LED starts blinking red and then release. This will reboot the device.

The sample may not look perfect: at this stage, plastic and design elements are not entirely polished (T1). We're making final adjustments of our tooling right now, so our products will soon look like the prototype on the fancy shots.

How to use Atmotube PRO

3 Once you open the app, press Connect.

4 Choose your Atmotube from the list of devices and you are all set.

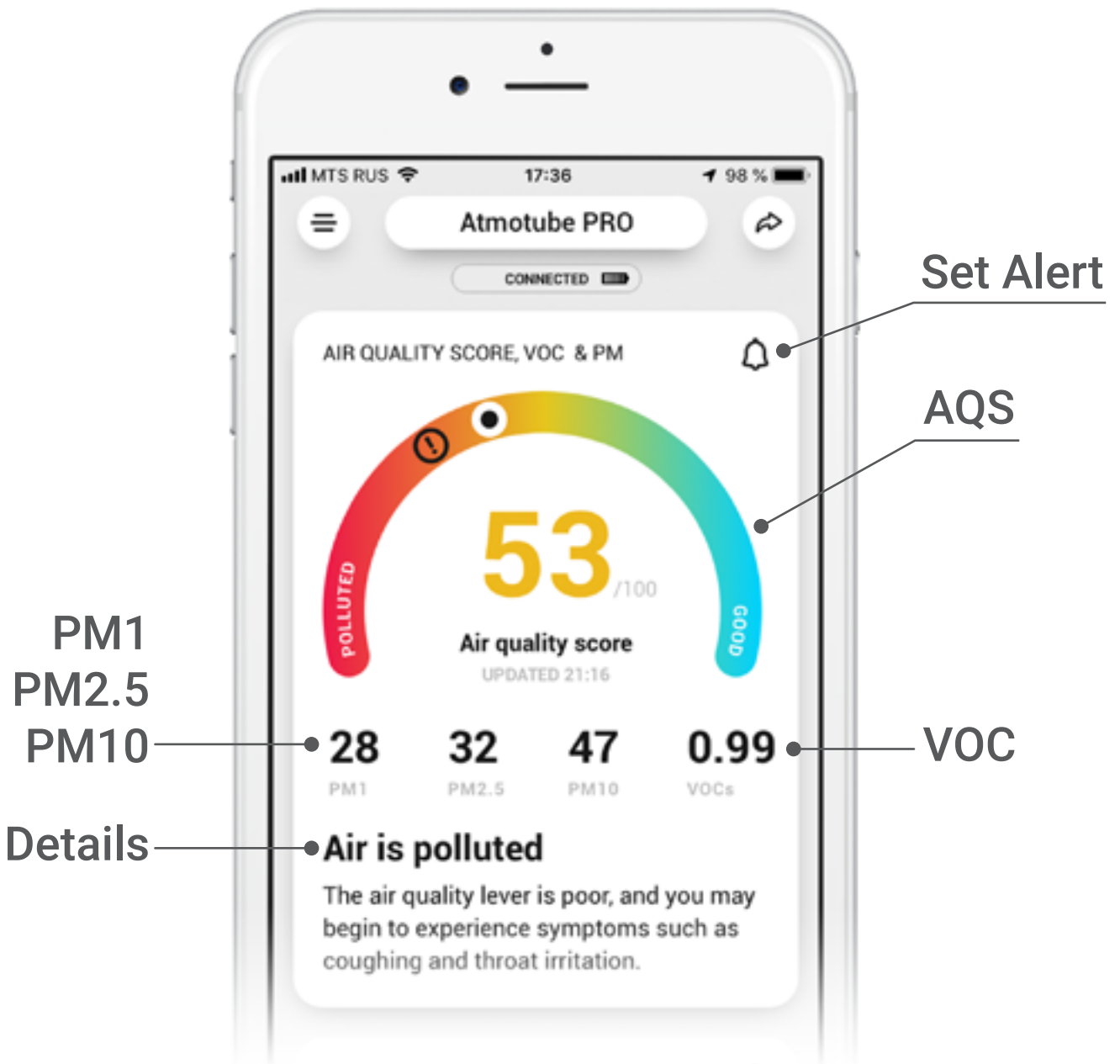


5 Observe the air quality score.

The device starts measuring air quality immediately but will get more accurate after the first 12 hours. Proper calibration takes time.

How to use Atmotube PRO

The Air Quality Score (AQS) is the first thing you see in the app. It provides an instantaneous reading of air quality near the device which combines VOCs and PM. The AQS varies between 0 (extremely poor) to 100 (very clean).



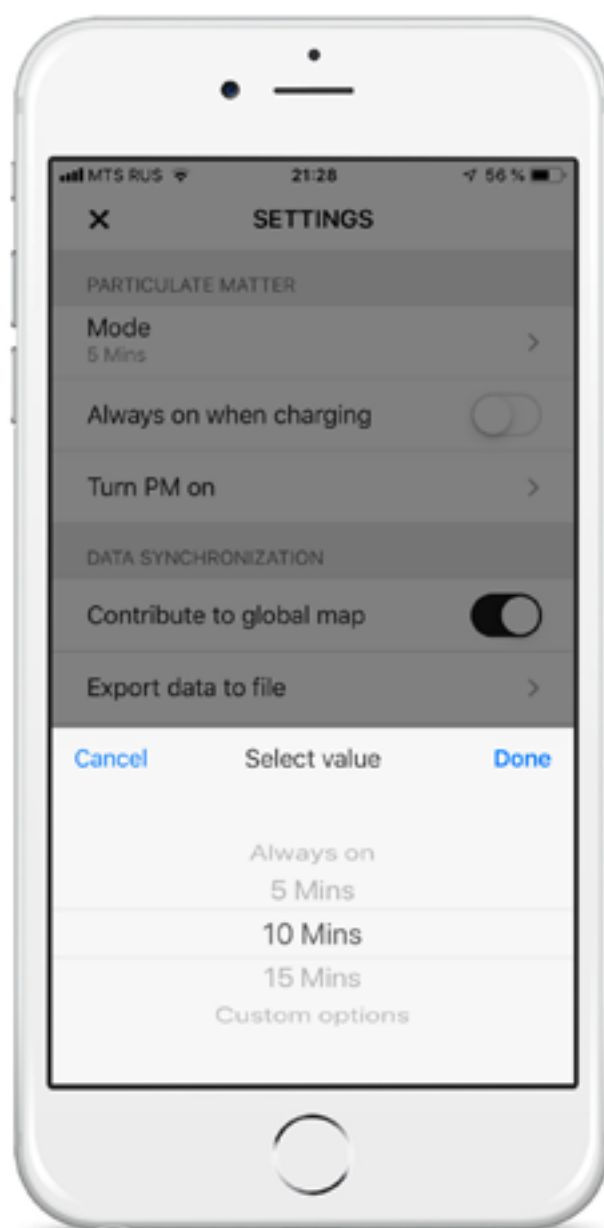
Modes of Atmotube PRO

Your Atmotube PRO works in "Always ON" mode by default since it provides most immediate readings for your tests.

You can select one of the following Modes in the App:

Always ON (1 day of battery life)
5 min (4 days)
10 min (8 days)
15 min (12 days)

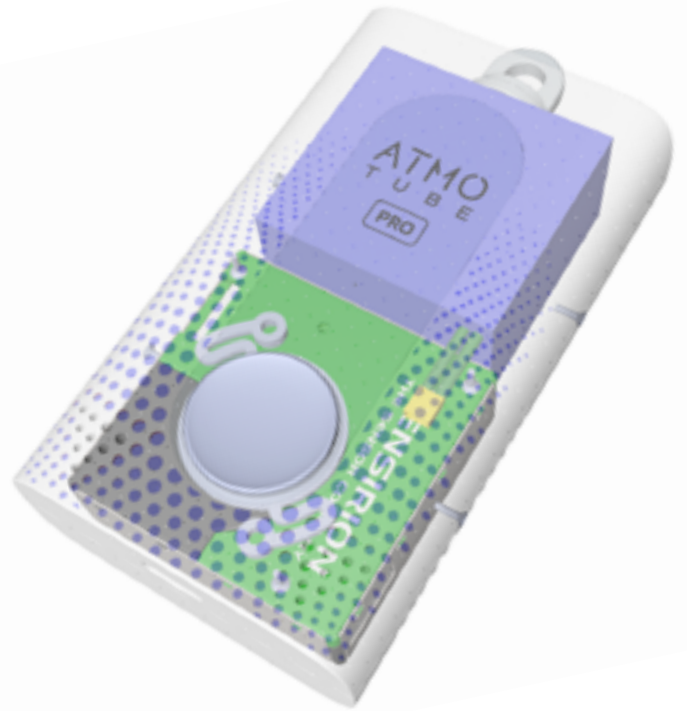
You can also create your own custom Modes in Advanced PM settings. It's recommended to use "Always ON" Mode while on the go to get immediate data on all changes in the air. While at home or in the office, you can use 5, 10 or 15 min Mode, since the environment will probably not change that often.



How it works

Atmotube PRO is equipped with 3 types of sensors:

1. Laser-based PM sensor
2. MEMS tVOC sensor
3. Combined digital sensor for humidity, temperature and barometric pressure



Here is how the Atmotube PRO works: there is a tiny fan inside, which is engineered for the most optimal air flow. It takes the air in and pushes it through several special chambers with sensors. The sensors then take readings of the air coming through. Collected data are sent to your smartphone in real time or stored in internal memory for up to 5 days if your smartphone is not around. The internal structure of Atmotube PRO is engineered in such a way that there is no maintenance required for the sensors or fan.

The noise level of the fan is about 20dB (rustling leaves). The fan is ON only during the readings, e.g. in 10 min mode it will be ON for 1 minute and OFF for another 9 minutes.

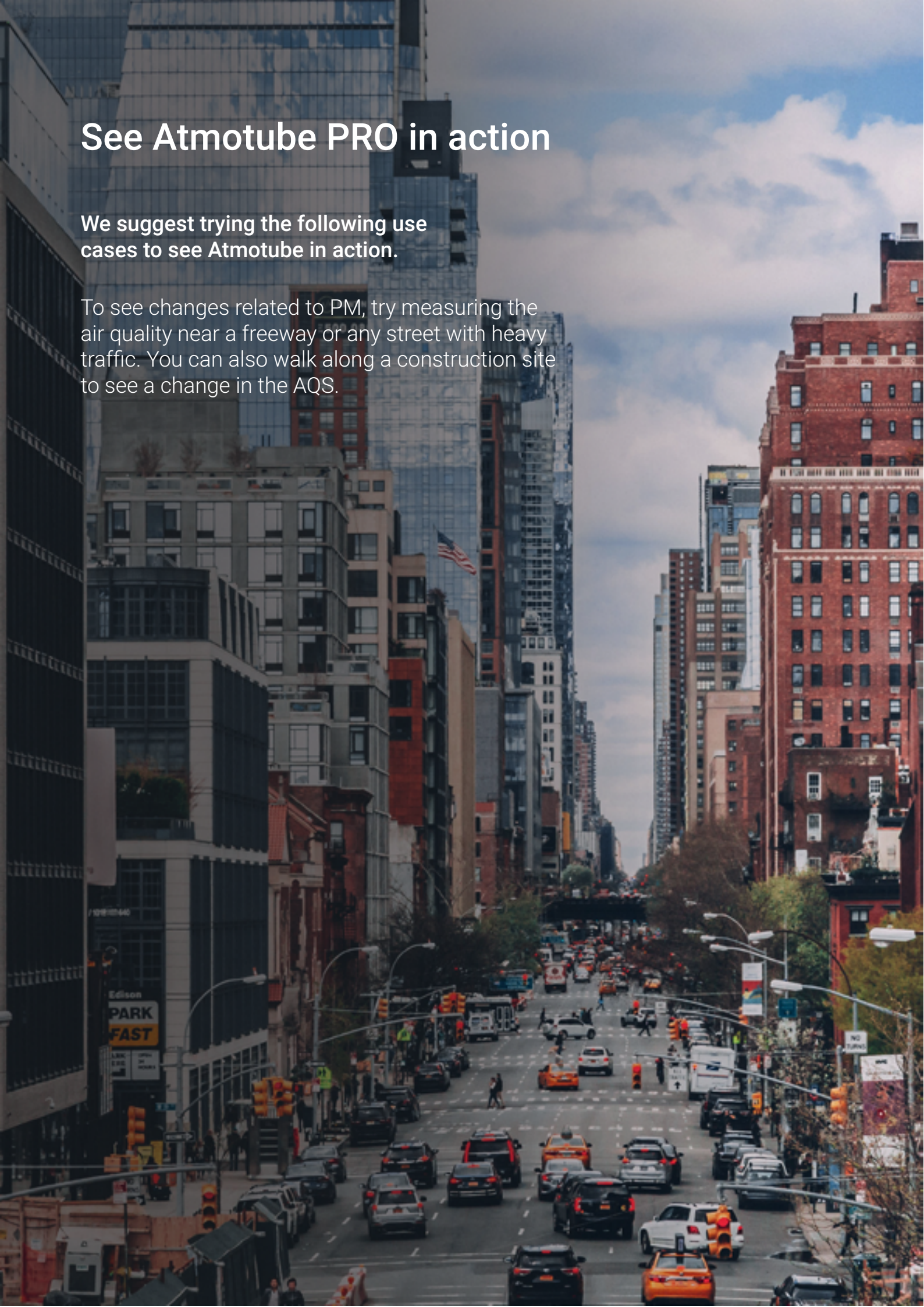
PM sensor measurement principle is based on laser scattering and makes use of innovative contamination resistance technology. This technology, together with high-quality and long-lasting components, enables accurate measurements from its first operation and throughout its lifetime of more than eight years.

The functionality of our tVOC sensor is based on the conductivity-change of the gas-sensitive MOX semi-conductor layers at gas exposure, which can be measured and analysed. In order to provide accurate readings the sensor gets calibrated on the production in clean air and gases mix. Since gases act differently at different temperatures / humidity levels, we utilize our humidity & temperature sensor for compensation for tVOC measurements.

See Atmotube PRO in action

We suggest trying the following use cases to see Atmotube in action.

To see changes related to PM, try measuring the air quality near a freeway or any street with heavy traffic. You can also walk along a construction site to see a change in the AQS.



See Atmotube PRO in action

Indoors you'll see the effect of PM on the AQS if you spray any cosmetics or house cleaning products in a small closed room.



Or check the air quality close to a stove while cooking and see how Atmotube reacts.



The Atmotube app

Barometer & Altimeter

Atmotube PRO includes a barometric pressure sensor which provides real-time information and alerts for those who are sensitive to weather changes.

Temperature & Humidity

Atmotube lets you monitor real-time the temperature and humidity so you can stay in your comfort zone and feel better.



Measurements History

Atmotube keeps tracking air quality even when your smartphone is disconnected from the device. Once Atmotube reconnects, your smartphone will download the missing data.

Air Quality Map

With our users' permission, we store anonymous, aggregated environmental data in the cloud to update and share a global air quality map that's free to use.

Each Atmotube contributes to global air pollution awareness in addition to being a potential lifesaver for you and your family.



Tech specs



- LED: Multi-color, RGB
- Casing: Polycarbonate plastic + Aluminum holder
- Radios: Bluetooth Low Energy (BLE 5.0)
- Sensors:
 - VOC sensor
 - PM1/PM2.5/PM10 sensor
 - Temperature, Humidity, and Pressure sensor
- Ports: USB Type-C
- Battery: Non-removable, rechargeable
- Li-Polymer (2000 mAh)
- Weight: 105 grams (3.7 oz)
- Dimensions: 86x50x22 mm (3.3x1.9x0.8 inch)

Resources

Website: <https://atmotube.com/>

Facebook: <https://www.facebook.com/atmotube>

Instagram: <https://www.instagram.com/atmotube/>

Twitter: <https://twitter.com/atmotube>

MediaKit:

<https://www.dropbox.com/sh/gqr3f1nl2z734m7/AABZ0YfJe5TrvyXliM8kBwhda?dl=0>

About the company

San Francisco-based design-studio NotAnotherOne has 11+ years experience with research and development, industrial design, and software development for both top tier mobile carriers and well-known technology startups.

NotAnotherOne started designing and engineering of Atmotube as its first product back in 2014 to raise awareness about indoor air pollution. In 2015, it successfully launched Atmotube on Indiegogo, reaching 338% of their goal. Over the past 3 years, NotAnotherOne has manufactured and shipped several thousand Atmotubes and accumulated lots of knowledge about air quality and sensor technologies, which it now puts to use in the next generation of its products, including Atmotube Plus and Atmotube PRO.

Atmotube won the CES Innovation Award in 2017 and Best Startup by Startup TV at IFA in 2018.

notanotherone.com

For more information, please contact our team at info@atmotube.com

