PALAS®

AIR QUALITY INDOOR MEASUREMENT SYSTEM

Healthy Rooms | Aerosol Germ Detection

Made in Germany.

How could **AQ Guard Indoor** help you right now?

We are the only company in the world that can combine the measurement of the smallest airborne particles including virus-laden aerosol droplets with the measurement of CO_2 concentration in the air.

AQ Guard Indoor combines proven high precision particle and CO_2 concentration measurement technologies **to determine the airborne contamination risk to room occupants.** This high-tech device provides a complete aerosol room surveillance system. It helps to keep a healthy room atmosphere and to reduce infection risks.

As soon as people move into indoor environments in which they may remove their respiratory masks, AQ Guard Indoor takes over their protection by acting as an **air monitoring system.** Whenever room contamination exceeds a preset healthy level, the system will indicate that countermeasures need to be taken; such as opening the windows or vacating the room.

This allows schools, companies, restaurant owners and responsible building operators to provide their pupils, colleagues and guests with completely safe indoor environments. Safety that can only be measured by Palas®!

Application examples

CLASSROOMS

OFFICES

CONFERENCES

RESTAURANTS

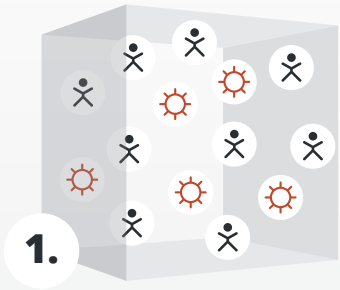
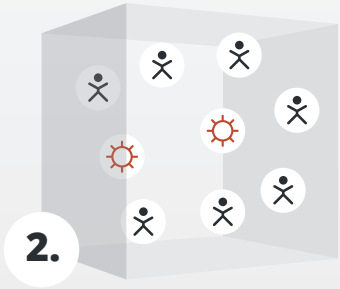
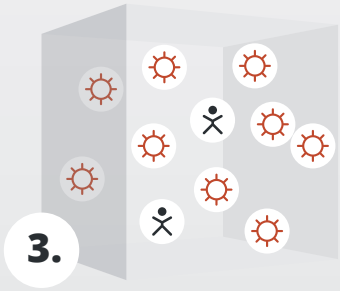
CONCERTS

PRODUCTION HALLS

How does it work?

AQ Guard Indoor uses highly sensitive particle measurement technology to measure the **number of airborne particles** in a room, including the smallest virus-laden aerosol droplets. It also assesses the number of people present through its **CO_2 concentration level.**

The combination provides a unique aerosol monitoring platform (patent pending) to guarantee an environment with clean and healthy air.
This technology can only be provided by Palas® and is second to none in the world.

	People CO_2	Virus-Sized Aerosols	AQ Guard Analysis
	high	high	✗
	high	low	✓
	low	high	✓

Why is it so effective?

AQ Guard Indoor is the only aerosol measuring technology in the world that combines CO_2 sensing with measurement of the smallest airborne particles. It is the only measuring technology that provides a clear, real-time assessment of the air quality in a room.

The product is quick **to set up,** easy to use and has a remote connectivity.

It is highly affordable with negligible maintenance costs. Its **compact size** and **attractive design** allows AQ Guard devices to be moved between locations easily. Flexibility is guaranteed through standalone and network versions.

In short, AQ Guard Indoor provides:

- The only air quality warning system with combined measuring technology of human activity and particle concentration
- Indoor safety through a complete aerosol room surveillance system
- Healthy rooms through particle monitoring resulting in reduced infection risk

Reference customers

Best-of-breed Palas® aerosol measuring technology has been acknowledged by the German Federal Ministry of Health which has purchased larger scale Palas® testing machines.

In conjunction with the world's leading independent inspection service provider **TÜV NORD,** BASF recently unveiled its **new Mask Testing Lab** at the company's Innovation Campus in Shanghai.

This joint initiative supports the **Federal Ministry of Health in Germany** in its procurement of face masks from China for both medical and non-medical uses. Palas® respiratory mask testing products include the compact and highly versatile Mas-Q-Check and the larger industrial sized PMFT 1000.

go green
to breathe clean.

Palas® is a leading developer and manufacturer of highprecision instruments for the generation, measurement and characterization of particles in air.

With more than 30 active patents, Palas® develops technologically leading and certified fine dust and nanoparticle analyzers, aerosol spectrometers, generators and sensors as well as related systems and software solutions. Palas® was founded in 1983 and employs more than 70 people.

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Effective January 2021

Technical features

Measuring principle (dust)	Single particle optical light scattering with evaluation of signal duration and shape, advanced mass conversion algorithm
Measuring range (dust)	PM_1, $PM_{2.5}$, PM_4, PM_{10}, TSP 0 – 20,000 µg/m³ Total number concentration C_N: 0 – 20,000 particles/cm³ Particle size 0.175 – 20 µm, Distribution in 128 size channels
Measuring range (gas)	Temperature: -20 – +60 °C Relative humidity: 0 – 100 % Pressure: 700 – 1100 hPa CO_2: 0 – 5,000 ppm TVOC: 0 – 60,000 ppb
Linearity (dust)	0.95 – 1.05
Accuracy (dust)	$R^2 > 0.98$ for $PM_{2.5}$ $R^2 > 0.94$ for PM_{10} (15 min. averages, vs. Fidas® 200)
Resolution (dust)	0.1 µg/m³
Zero point (dust)	0 µg/m³ based on 24 h average

Air sampling rate	1.0 l/min = 0.06 m^3/h
Response time (PM data)	Down to 1 s (user definable)
Interfaces	5“ high resolution color display with touch functionality USB, Ethernet, WiFi, 4G (optional)
Data storage	10 GB (internal)
Communication	UDP ASCII, ASCII/TCP, Modbus RTU, UIDEP, Bayern-Hessen Built-in web server for universal access
AirQualityIndex	Based on $PM_{2.5}$, PM_{10}, $CO_{2,}$, TVOC
InfectionRiskIndex	Based on CO_2 and particle number concentration
Operating conditions	-20 – +50°C
Power	12 V ± 10 % DC, consumption: < 15 W (AQ Guard), PoE option 15 – 50 W (AQ Guard Ambient)
Weight	2.4 kg (AQ Guard) 3.9 kg (AQ Guard Ambient)
Dimensions (W • D • H)	280 • 140 • 175 mm (AQ Guard) 320 • 190 • 240 mm (AQ Ambient)