



AQ GUARD SMART 2000

# AIR QUALITY MEASUREMENT

Monitoring of Ultrafine Particles

*Made in Germany*

# Precise Monitoring of Ultrafine Dust with **AQ GUARD SMART 2000**

Ultrafine particles (UFP) significantly impact our health – confirmed by the World Health Organization (WHO). However, optical aerosol photometers or spectrometers can hardly or not at all detect them due to their small size.

**AQ GUARD SMART 2000** was specially designed for use in the ultrafine particle range. The compact and easy-to-use measuring device closes the gap between classical condensation particle counters (CPC) and optical systems and convinces by its price-performance ratio.

The **AQ GUARD SMART 2000** is suitable as a quality control instrument to check and compare concentrations or detect trends and deviations.

Long-term measurements for the evaluation of number concentrations indoors and outdoors are thus easily and reliably possible, for example, at highly polluted locations such as seaports and airports, main roads, forwarding agencies, or even toll and border stations. But the **AQ GUARD SMART 2000** is also used for formation and dispersion studies.





# Application Examples



**SEAPORTS**



**SMART CITY**



**TRAFFIC JUNCTIONS**



**AIRPORTS**



**INDUSTRIAL PLANTS**



**DISPERSION STUDIES**

# Principle of Operation

**AQ GUARD SMART 2000** is a reliable instrument for simple yet accurate monitoring of particle number concentrations of UFP based on the principle of diffusion charging.

**AQ GUARD SMART 2000** is low-maintenance and runs smoothly over more extended periods of time without recalibration. Data transfer options are versatile, ranging from USB, Ethernet (LAN), Wi-Fi, 3G/4G via modem to LoRaWAN (optional).

**AQ GUARD SMART 2000** is MyATMOSPHERE-ready. A connection to the Palas Cloud MyATMOSPHERE offers additional advantages. Operators (private or governmental) can retrieve current measurements and compare them directly with other devices. Via an optional programming interface (API), MyATMOSPHERE can also be integrated into your own environments.



Datasheet

# Special Advantages and Benefits

## LATEST TECHNOLOGY

- Simple and accurate monitoring of particle number concentration for UFP
- Fast commissioning and immediate acquisition of measured values via the MyATMOSPHERE cloud
- Situational configuration via Wi-Fi hotspot, remote access as well as external touchpad
- Communication via GPRS / 3G / 4G / Ethernet / Wi-Fi, optional: LoRaWAN
- Expandable with weather station

## DIFFERENT MEASUREMENTS

- Measurement of particle concentration as well as LDSA (Lung Deposited Surface Area)
- Measuring range number  $C_N > 1,000$  particles/cm<sup>3</sup> as well as size from 0.01 µm
- Measuring principle of diffusion charging

## BEST PRICE-PERFORMANCE RATIO

- Alternative to CPC (Condensation Particle Counter) number concentration measurement with calculation mean diameter (X50)
- Suitable for indicative measurements of ultrafine particles according to Ambient Air Quality Directive 2024/2881/EU

# More Measurement Devices

... for air quality monitoring in real time.

The AQ GUARD SMART 1000 is a MCERTS Indicative certified particulate matter device that can detect  $PM_{10}$ , TSP,  $CO_2$ ,  $PM_1$ ,  $PM_{2.5}$ ,  $PM_4$ .



... for precise nanoparticle measurements.

Our nanoparticle measurement systems UF-CPC and ENVI-CPC measure the number concentration of ultrafine aerosols from  $D_{50} = 10$  nm (according to EN 16976:2024).



Palas is a leading developer and manufacturer of high precision 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 100 people.

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