

AQ GUARD SMART 2000



AQ Guard Smart 2000 is a measuring device for monitoring particle concentrations in the ultrafine range. These ultrafine particles (UFP) significantly impact health, according to the World Health Organization (WHO). The WHO has therefore been recommending their monitoring since 2021. They typically cannot be detected by optical aerosol photometers or spectrometers due to their small size

Mass limit values such as $PM_{2.5}$ and PM_{10} can be measured well with gravimetric methods; at the latest, for smaller PM_1 , ultrafine fractions are difficult to estimate and can be meaningfully assessed only by determining the particle concentration.

Expensive and more maintenance-intensive condensation particle counters are usually used to measure ultrafine particles. A size-classifying system (Scanning Mobility Particle Sizer) can make statements about particle size distribution ...

BENEFITS

- Simple and precise monitoring of UFP concentrations from 10 nm
- Suitable for high concentrations up to 10,000,000 particles/cm³
- Quick and easy installation
- Long-term stability (24/7) and low maintenance, no working fluids required
- Reliable measurements
- Flexibility in communication and data transmission
- Versatile application options, even in demanding environments
- Access to data in real time and with high temporal resolution

APPLICATIONS

- UFP concentrations in and around airports and sea-ports
- Formation and dispersion studies
- Immission monitoring of industrial plants
- Urban air quality monitoring
- Supplementary measurement of UFP concentrations at traffic-rich sites

FEATURES

- Measurement of the particle number concentration by diffusion charger
- Communication via GPRS / 3G / 4G / Ethernet / Wi-Fi, optional: LoRaWAN
- Expandable with third-party devices, metrology and sensors
- Data visualization via Palas Cloud (MyAtmosphere-ready)
- Measurement data acquisition per second

DATASHEET

Measuring principle	Diffusion charging	Reported data	C _N , average diameter X50, LDSA (Lung Deposited Surface Area), ambient pressure, ambient temperature, rel. ambient humidity
Measurement range (number C _N)	1,000 – 10 ⁸ particles/cm ³	Measurement range (size)	From 0.01 µm
Interfaces	USB, Ethernet (LAN), Wi-Fi, 3G/4G via Modem, optional: LoRaWAN	Protocols	UDP, ASCII, Modbus
Installation conditions	-20 – +40 °C	Dimensions	530 • 270 • 208 mm (H • W • D)
Weight	Approx. 6 kg	Special features	Heated inlet, mast / tripod mount
Data Management	Prepared for connection to the Palas Cloud MyAtmosphere ("MyAtmosphere-ready"); internet access and separate registration required. MyAtmosphere terms and conditions of use apply.		