# AQ Guard Smart 2000




AQ Guard Smart 2000 is a measuring device for monitoring particle concentrations in the ultrafine range. 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 and concentration.

## Benefits

- Simple and precise monitoring of UFP concentrations from 10 nm
- Suitable for high concentrations up to 10,000,000 particles/$cm^3$
- 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 seaports
- 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

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|---|---|
| Measuring principle | Diffusion charging |
| Reported data | CN,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 $\mu$m |
| 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”) |