AQ Guard Smart 2000

Description

The AQ Guard Smart 2000 is a measuring device designed to measure particle concentrations in the ultra-fine range, which typically cannot be detected by optical aerosol photometers or spectrometers due to their small size, but which have a significant impact on health according to the WHO.

Currently, no legal regulations or limits have been established for ultra-fine particle concentrations and masses. Mass limits like $PM_{2.5}$ and PM_{10} can be measured well with gravimetric methods, at the latest for smaller PM_1 fractions of ultra-fine fractions are difficult to estimate and can be evaluated meaningfully only by the determination of the particle concentration.

In this case, valuable and maintenance-intensive condensation particle counters are usually used, which in combination with a size-classifying system (Scanning Mobility Particle Sizer) provide information about the particle size distribution and concentration.

AQ Guard Smart 2000 for ultra-fine particles closes the gap between classical condensation particle counters and optical systems. Long-term measurements for the evaluation of number concentrations in outdoor areas, but also in indoor buildings e.g. at highly polluted places like airports, main roads, forwarding agencies or also e.g. toll stations are easily and reliably possible and can already be used for the definition of avoidance and reduction measures in a meaningful and targeted way.

The **cloud application** MyAtmosphere[1] created for this purpose enables both private and governmental operators to retrieve current measured values directly, to compare them with other devices without delay and further processing or to integrate them into their own systems/environments via an optional programming interface (API).

[1] Link zu MyAtmosphere: http://www.my-atmosphere.net/

Benefits

- Simple and accurate monitoring of particle number concentration of UFP
- Affordable and low maintenance, no working fluid
- Flexible use - indoors and outdoors
- High temporal resolution
- Versatile data transmission options

DATASHEET

Measuring principle	Diffusion charging
Reported data	Particle concentration C_N, LDSA (Lung deposited surface area)
Measurement range (number C_N)	> 1000 particle/cm3
Measurement range (size)	starting from 0,010 μm
Weight	Approx. 6 kg
Installation conditions	0 – +40 °C
Interfaces	USB, Ethernet (LAN), Wi-Fi, 3G/4G via Modem, optional: LoRaWAN
Protocols	UDP, ASCII, Modbus
Special features	Accessories: Mast / tripod mount, optional: weather station, sunshade, LoRa modem
Dimensions	530 • 270 • 208 mm (H • W • D)
Data management	Cloud connection to MyAtmosphere (separate registration necessary; cloud license fees may apply or SIM card required)

APPLICATIONS

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- UFP concentrations in and around airports and seaports
- formation and dispersion studies
- Construction site and remediation areas
- Immission monitoring of industrial plants
- Urban air quality monitoring
- Supplementary measurement of UFP concentrations at traffic-rich sites

Mehr Informationen:
https://www.palas.de/product/aq-guard-smart2000

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