pegasor

- Real-time monitoring
- PN, LDSA, PM and particle size
- User-friendly operation, minimal maintenance




Pegasor Airam

# ULTRAFINE PARTICLE MONITOR FOR AIR QUALITY MEASUREMENTS

# Pegasor Airam

Ultrafine particles (UFPs) in the air pose a significant health risk to people, and yet they often escape detection by conventional air quality monitoring methods. As recommended by the WHO, monitoring UFPs is crucial for comprehensive air quality assessment. EU's updated air quality directive also includes the requirement for UFP monitoring. The Pegasor Airam provides a reliable and effective way to monitor these tiny particles in urban environments. Equipped with the advanced Pegasor PPS-G2 sensor, the Airam system delivers real-time data on particle number, lung deposited surface area, and particle mass concentration. This makes the Pegasor Airam ideal for researchers, environmental agencies, and anyone concerned about air quality.

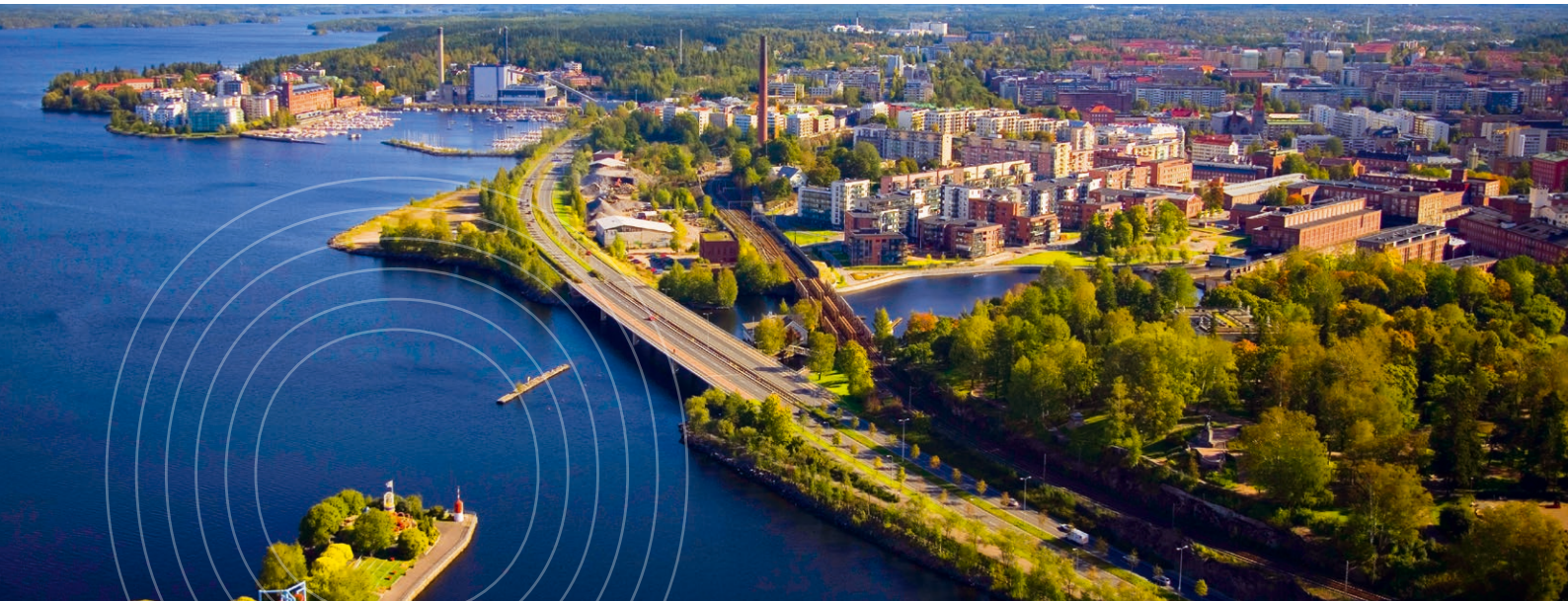
## Pegasor Airam operation

The Airam PPS-G2 sensor operation is based on electrically detecting aerosol particles using the escaping current technique. In the PPS-G2 sensor, the particle sample is charged by a corona-ionized flow as it is being pumped in by an ejector pump built in the sensor's construction. This unique design maintains constant sample flow and keeps all the critical parts within the sensor clean while providing a known, calibrated charge level to the particles in the sample. For operation, the sensor only requires a clean air supply, which is built into the Airam system.

The excess ions generated in the charger are collected on the grounded sensor body, and do not affect the particle detection. A sensitive electrometer measures the charge of the sample particles exiting the sensor. This charge or "escaping current" is the measure of the particle concentration in the sample. Since the particles flow through the sensor without being collected, and clean sheath air protects critical parts of the system, the sensor remains clean even in the long term measurements. This unique design enables extremely long measurement periods, even up to years, with zero maintenance.

The PPS-G2 sensor also includes a dynamic trap function that determines the median size of particles in the sample gas. This method enables unparalleled single-device measurement of particle number, LDSA, mass, and size.

The Pegasor Airam system is housed in a weatherproof cabinet with extensive self-diagnostics. A heater for the sensor module is included inside the system to prevent condensation, and the integrated pump with required filters ensures standalone operation without need for external air supply units. The data is saved via Ethernet, 4G or Wi-Fi to a remote location. Pegasor's cloud service is also available for viewing and saving the data remotely.



# Airam Features

- Continuous & real-time monitoring of ultrafine particle concentration (UFP)
- PN, LDSA, PM concentration measurement of ultrafine particles
- Median particle size measurement
- Minimal maintenance and carefree operation
- Non-collective measurement method ensures very long maintenance intervals
- No consumables, no operating liquids
- User-friendly operation
- Several data communication options, including the Pegasor Cloud Portal
- Extensive self-diagnostic system for increased reliability
- Integrated pump included for sensor operation, no external pumps or air compressors needed

- Real-time air quality monitoring
- Urban air quality monitoring
- Ultrafine particle monitoring networks
- UFP monitoring at airports and harbours



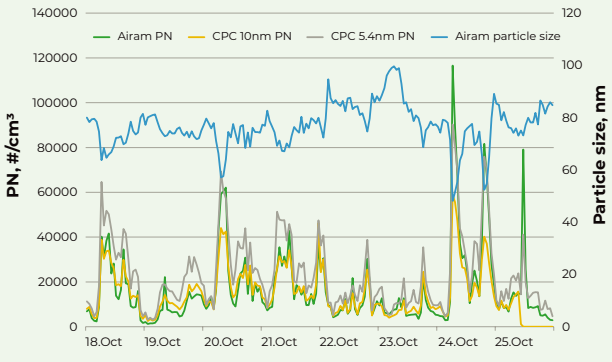

# Pegasor Cloud Portal

The Pegasor Cloud Portal provides an easy way to manage and access data from the Pegasor Airam and other compatible devices. With its secure web interface, you can view real-time measurements, organize data, and generate reports efficiently. Data transfer requires a SIM card for the modem or a fixed Ethernet connection.

The portal is designed to support various applications, from industrial environments to urban air monitoring and specialized settings like airports. Whether you need basic monitoring or more detailed analysis, the Pegasor Cloud Portal offers a reliable and convenient solution to keep track of air quality data.



The Pegasor Cloud Portal secure web interface.




Ultrafine particle number concentration and size measured in Helsinki, Finland with Pegasor Airam and two Condensation Particle Counters (CPCs) with different lower cut points.

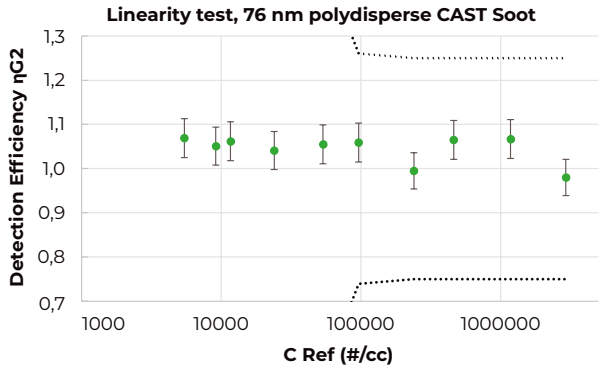
# Specifications

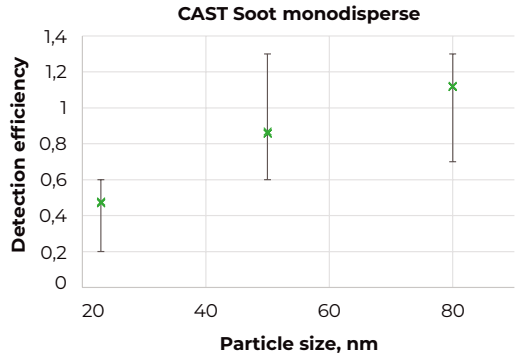
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|---|---|
| **Range** | 0–100,000,000 #/cm³ |
| **Sensitivity** | 30 #/cm³ depending on sampling rate and data averaging |
| **Particle size** | 10–200 nm for PM and particle size<br><br>10 nm – 1 µm for PN and LDSA |
| **Sensor response time** | 0.2 s |
| **Sampling rate** | 1 Hz, averaging options available |
| **Output data** | Particle number, LDSA and mass concentration, particle median size |
| **Data storage and communication** | Ethernet, 4G, Wi-Fi, Modbus logger, Pegasor Cloud Portal, USB (available soon) |
| **Power requirements** | 24 VDC (optionally 230/115V) |
| **Dimensions** | 457 x 320 x 194 mm |
| **Weight** | 7.7 kg |

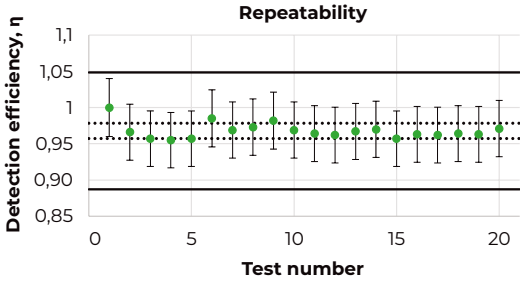



# Sensor performance

PPS-G2 sensor performance measured by Federal Institute of Metrology METAS: Test report 235-11079.




03/2026

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