Nanoparticle Measurements in Motion
News from TSI

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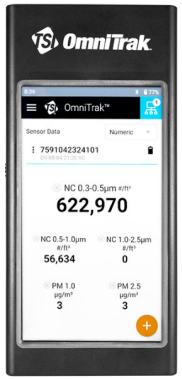
Portable instruments for PN and PM

OmniCount 3001 & 3002
Total UFP from 10-1000nm

+



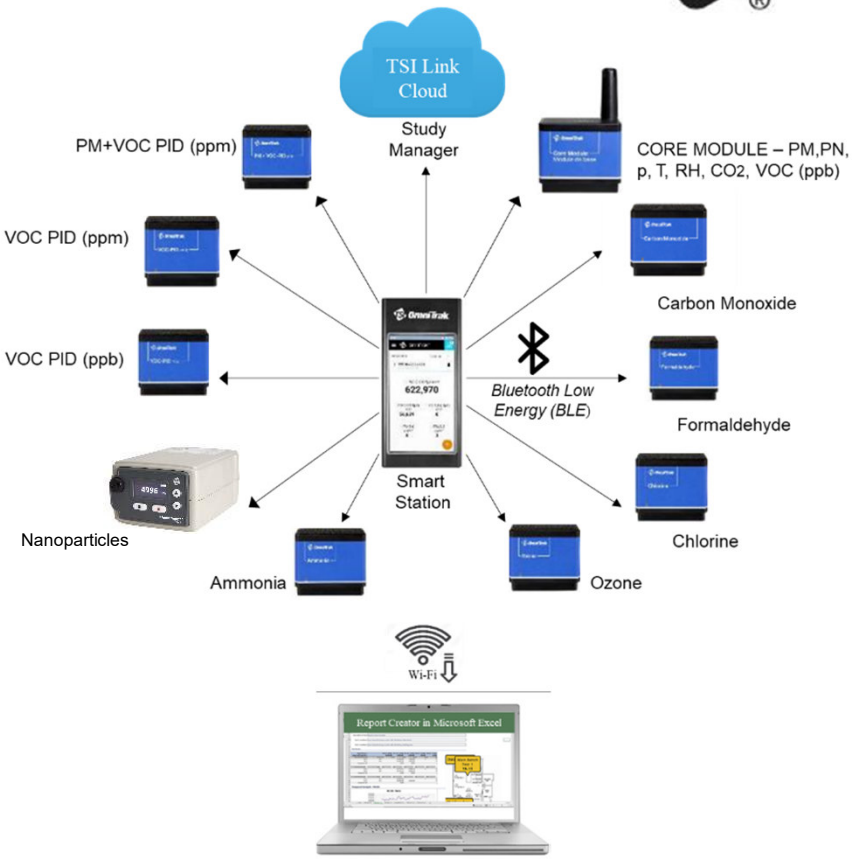
OmniTrak CORE
5 channels 0.3 -10 µm
PM_1, $PM_{2.5}$,PM_4,PM_{10}
CO_2, VOC, p, T, RH

+

Mini Moudi 135-6B
6 stages 10, 5.6, 3.2, 1.8, 1.0, 0.56 µm

The “Omni Family”

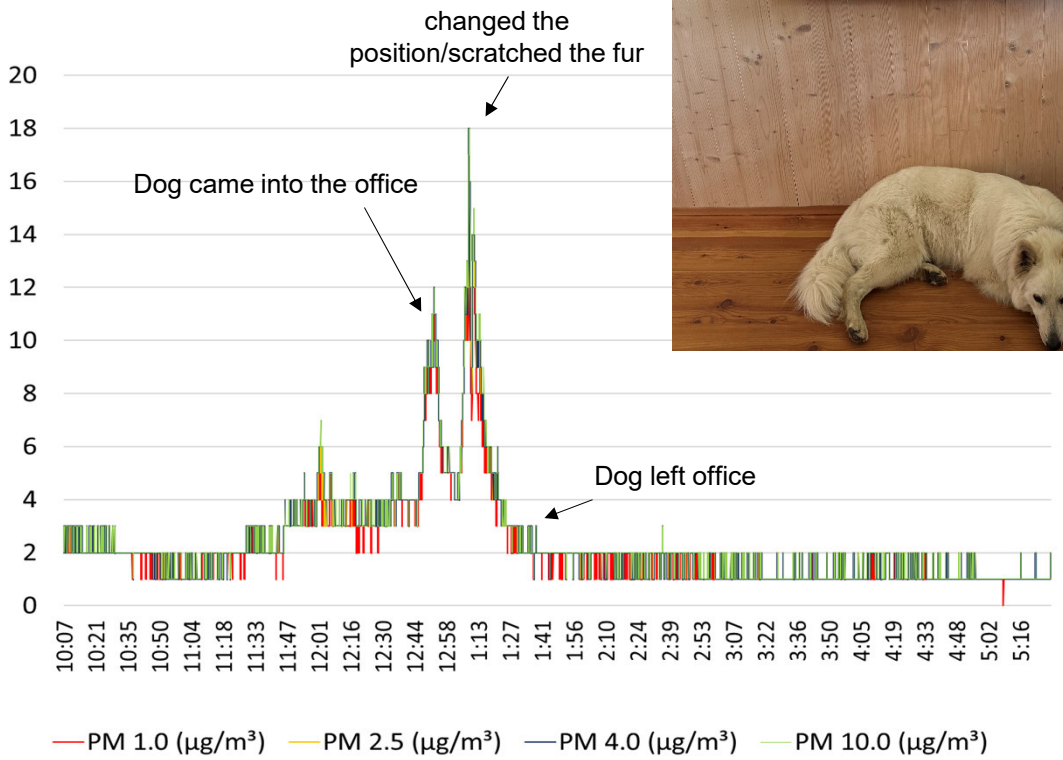
- Literally measure anywhere
  - **11 modules for immediate, on-site visibility into indoor environmental conditions**
  - E.g. PN, PM, VOC, Ozone, CO, CO2, p, T, RH, and sound!
  - **IAQ studies in shops and vehicle cabins are accessible to everyone!**
  - **Up to 10 modules can be connected to one smart station for synchronized measurements on the same time scale**
  - **A report generator helps to evaluate the data in minutes**

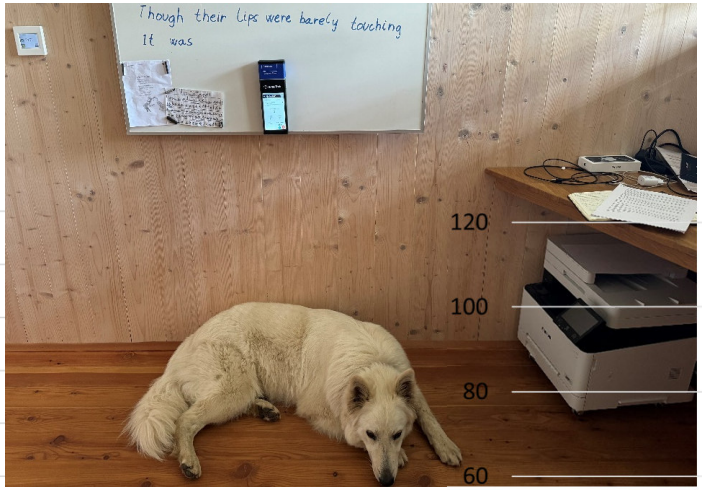


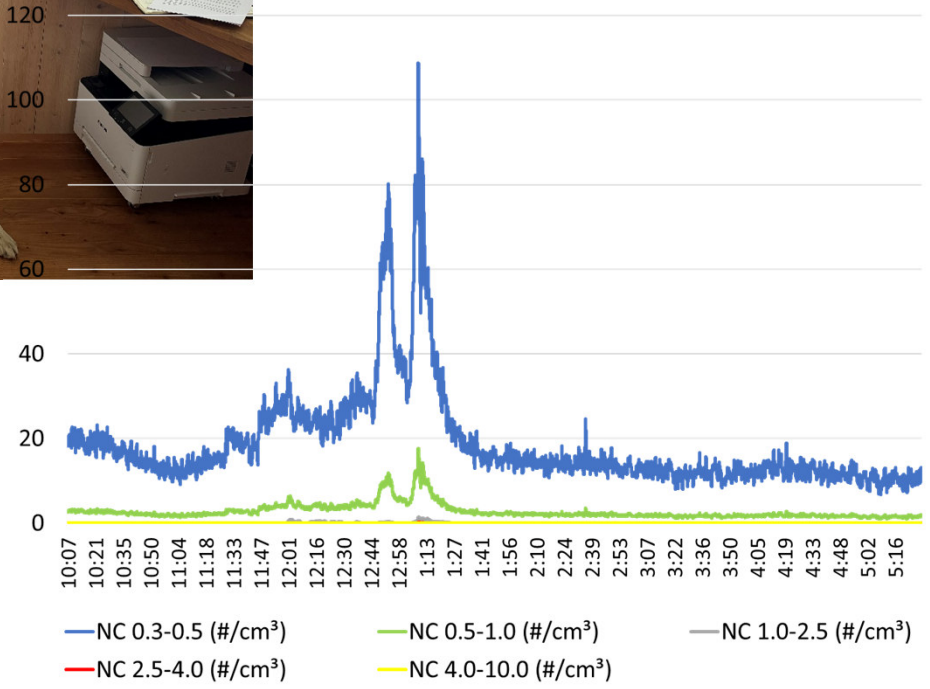
Omnitrak

IAQ in the home office

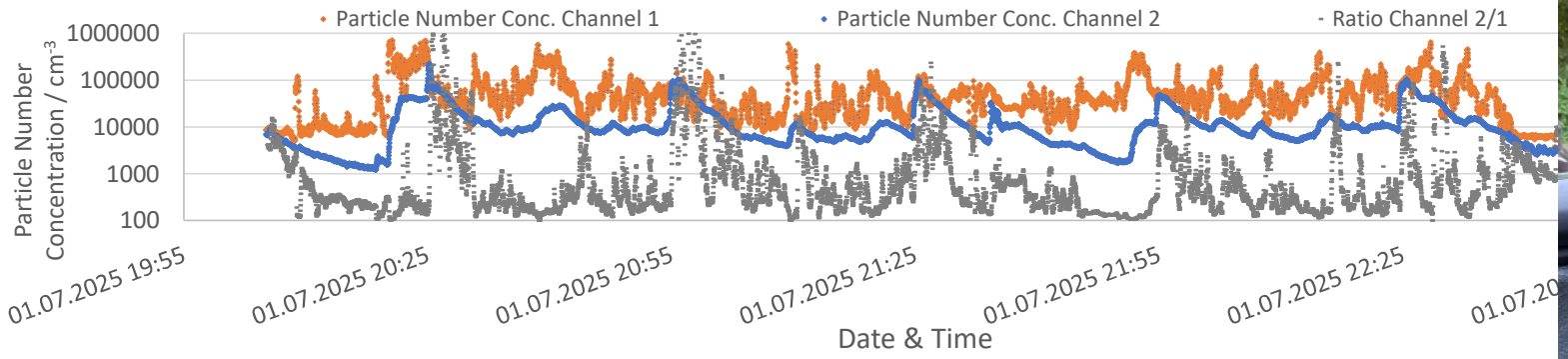
➔ Shows the increase of particles originating from animal's fur





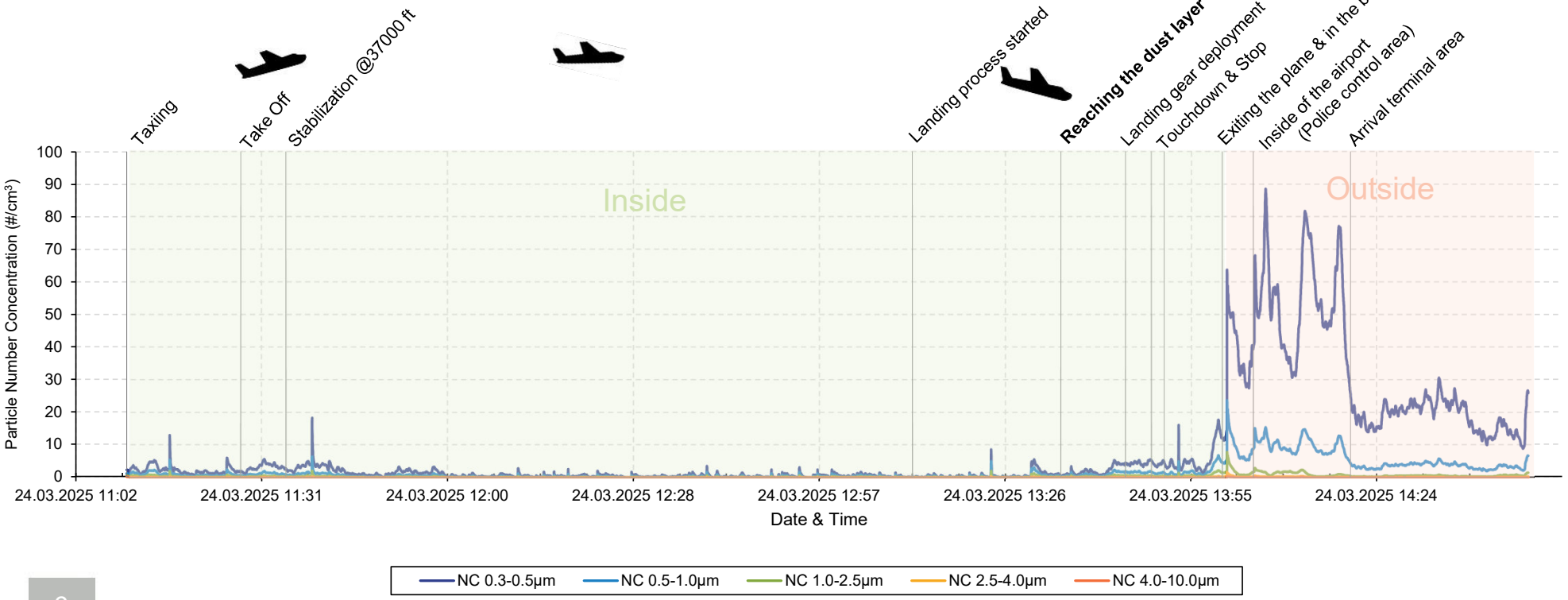


Car ride Münster – Hamburg (Germany) 2025-07-01

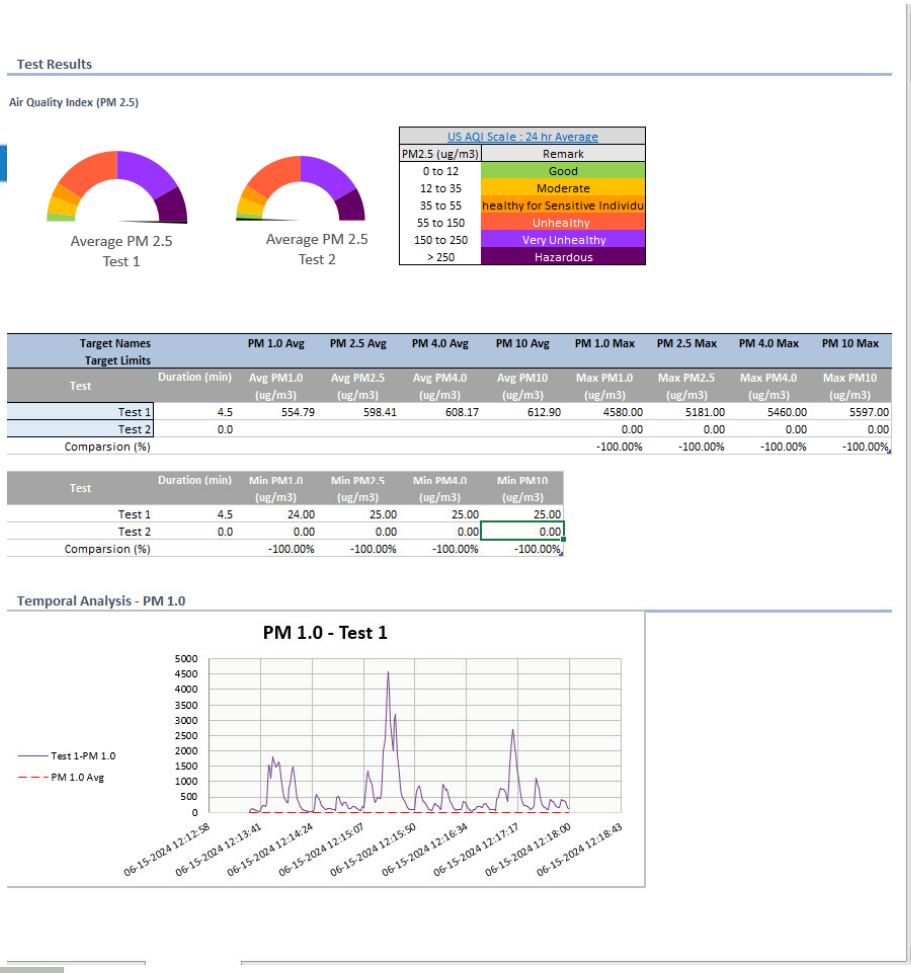


- Channel comparison cabin air
- Window open for 1 min during ride
- Fuel station

Results
Particle Number Concentration

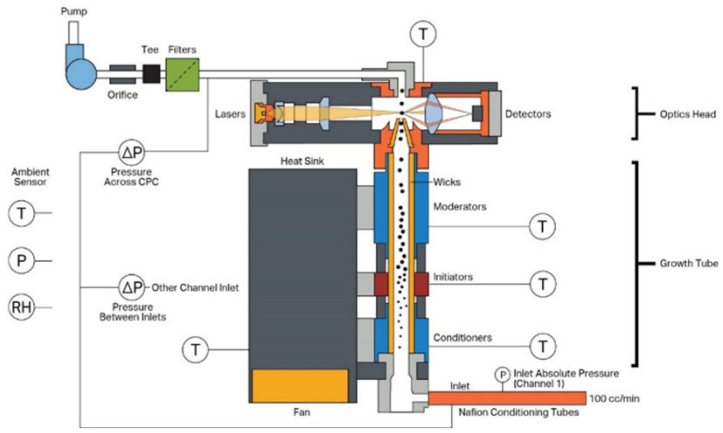


Omnitrak Report Creator



Indoor Air – Portable WCPC

- OmniCount™ Portable WCPC (TSI)
  - Newest model 3001, compact version of lab-grade V-WCPC 3789
    - Same core technology but miniaturized for mobile use
  - For time-resolved measurement of PNC from <10 nm
- Made for mobile measurements
  - Small, low weight (850 g)
  - Reliable operation in any orientation (flood resistant)
  - Several hours of operation between water refills
  - Wireless connectivity
- Conducted extensive performance testing
  - Efficiency curve and lower detection efficiency (d_{50})
  - Concentration accuracy

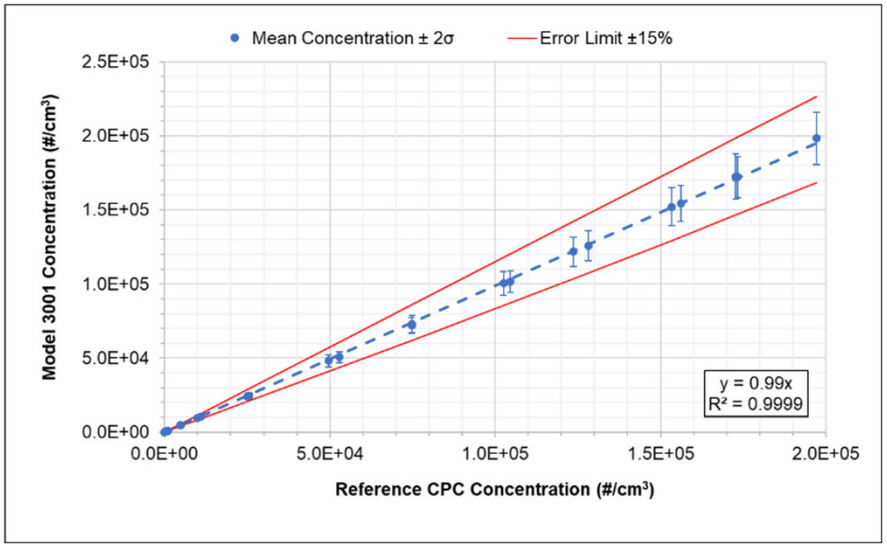


Schematic & Picture © TSI Incorporated

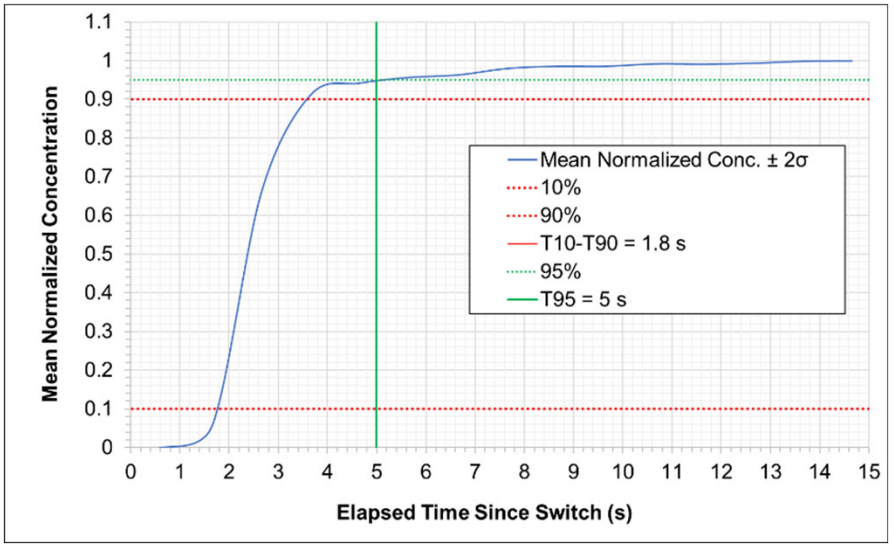
Portable WCPC Characterization

- Performance for atomized polydisperse NaCl aerosol from Atomizer (TSI 3076, GMD ~60 nm)

Agreement with reference CPC



Time response



Summary

- Reliable tools to assess the air quality
  - In vehicle cabins
  - In offices next to manufacturing
  - In workshops, garages
  - Before and after filtration systems
  - In motion or stationary
  - By combining various parameters
  - For accurate & fast results!

Indoor air quality

Dirty office air picture created with Copilot

Thank you!

Drone Measurements w/
3002 Omnicount by AGH Krakow (PL)

Any Questions?

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