Fachhochschule Nordwestschweiz
Hochschule für Technik

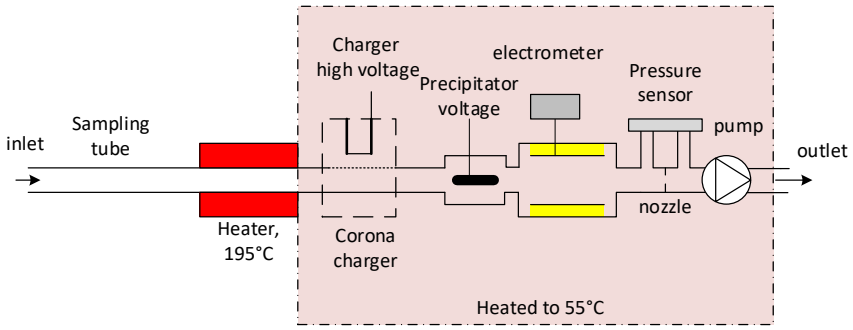
Institute for Sensors and Electronics (FHNW/ISE)

Emission measurements made easy

Handheld Emission Particle Counter (HEPaC)

About HEPaC

- Allows simple measurement of particle number concentrations
- Is based on the Partector 2 by naneos
- As the whole sensor is heated emission measurements can be done without dilution
- Concentration range up to 5'000'000 Particles/cm^3.
- Large maintenance interval, as no liquid, no dryer is used and most particles are not precipitated in the instrument
- Connectivity to PC, Tablet, via Bluetooth
- Can be operated in Official Measurement mode – which follows protocol for Swiss regulation SR 941.242 (type certificate CH-K4-20002-00)– or in General mode, which allows customized measurements



The sampled exhaust is heated to 195°C before entering into the sensor, particles are then charged by a unipolar diffusion charger, followed by a pulsed precipitator and the measurements stage, where the induced current is measured

Applications

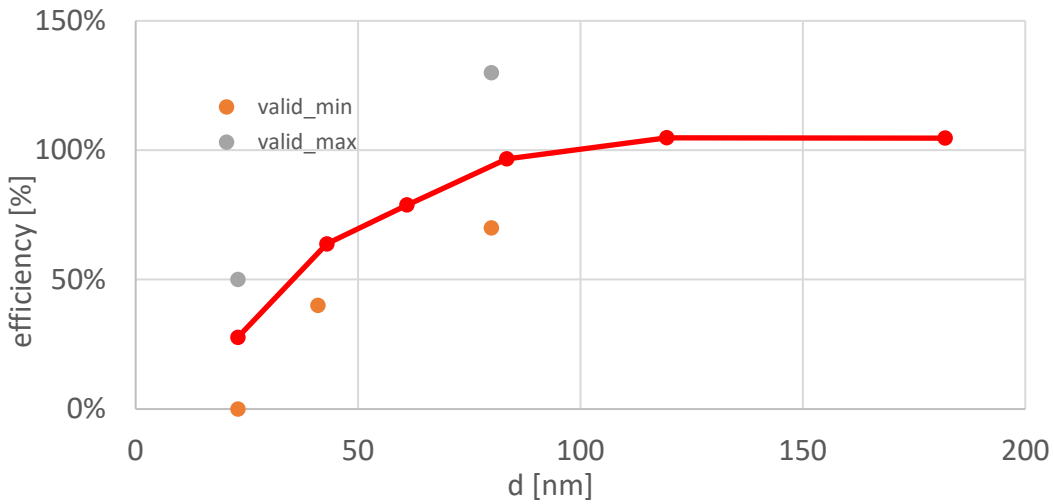
- Emission measurements of combustion engines
- Official periodical inspection measurements according to the Swiss regulation SR 941.242 for construction engines and other off-road engines
- Diesel particle filter compliance test
- Fleet emissions tests

Specifications

Measured value:
Particle number concentration N

Concentration range :
N: $10^3 – 5 \cdot 10^6$ pt/cm^3

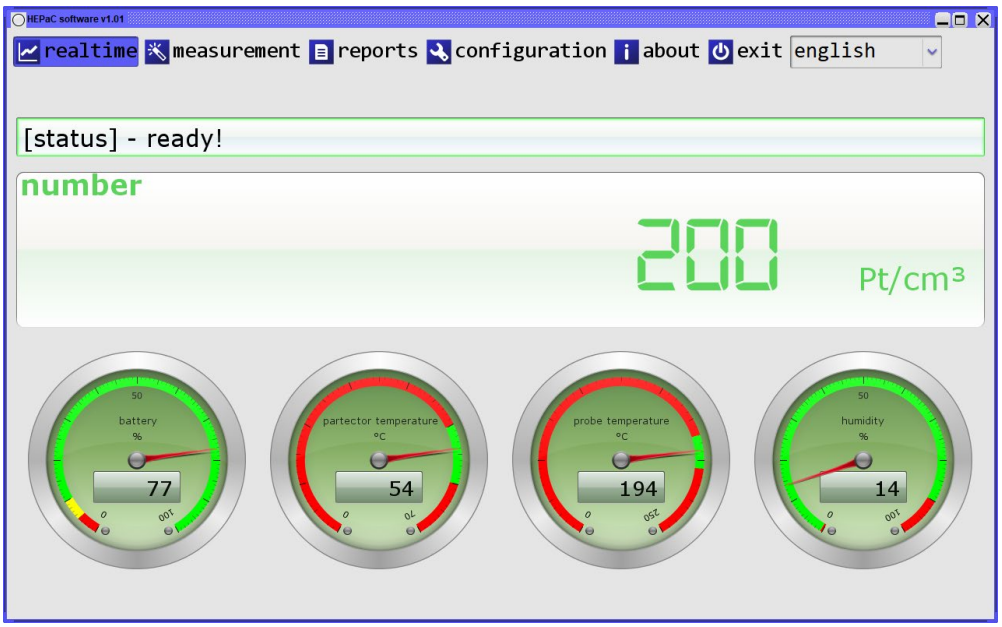
Efficiency versus size



Time resolution: 1 s
Response Time: 5 s
Inlet flow: 0.5 l/min
Environmental Operating Temperature: 5 – 40°C
Storage Temperature: -10 – 50°C
Sensor temperature: 55°C
Evaporation tube temperature: 195°C
Heat up time: ~ 20min
Relative Humidity: 10 % to 90%, non-condensing
Environmental pressure range: 860 – 1060 hPa
Battery: Rechargeable Li-Ion, 48Wh
Battery lifetime: ~ 3h
DC input voltage: 12V ± 2V
Max. charging current: 4.5A
Dimensions: 8.8 x 14.2 x 3.4 cm
Weight: 450 g

Sampling tube extensions allow easy adaption to different tail pipes (ask for options)

Can be used stand alone or communicate via Bluetooth with PC/Tablet, where measured concentration and instrument status are displayed and the report for official measurements is produced.



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