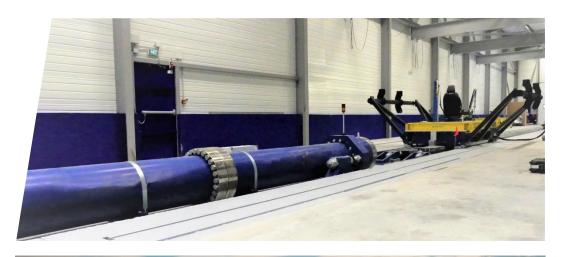


Test Equipment requirements: Proposal







Pollutant to be mesured



Following the first draft shared in VIAQ 25th session, the gas and particle to be measured are:

Purpose

Components	Requirements
PN	0 to 500000 #/cm ³
PM _{2.5}	0 to 0.5 mg/m ³ or 100 mg/m ³
PM ₁₀	0 to 1 mg/m ³ or 100 mg/m ³
CO	0 to 1ppm
CO2	0 to 5000 ppm
NO2	0 to 0,5 ppm

Optional

Components	Requirements
PM	NA
tVOC	NA
PAH	NA
NO _x	NA
NH ₃	NA
O_3	NA



Two methods could be proposed

Real time measurement

Bag measurement

- This method require a specific cycle with specific phases
- Measurement technologies are well known and more accurate but depend on the measurement duration (Same analysers as WLTP regulation and PMP Euro 7)
- Time after the test should be defined
- Need a sampling bag covered with a black opaque film and sampling pump



For PN:

- Technology:
 - Optical Particle Counter (OPC)
 - Condensation Particle Counter (CPC)
- Specification:
 - Flowrate: 100 cc/min
 - Resolution time: 1 s
 - Particle dimension: 0,02 et 1 μm
 - Measuring range: 0 to 5 × 10⁵ particles/cm³
 - Temperature range: 0 to 38°C

For PM

- Technology:
 - Photometer method
- Specification:
 - Measuring range: 0.001 to 400 mg/m3
 - Accuracy: ±5% of reading
 - **Resolution**: 0.1 µg/m3



For CO:

- Technology:
 - Infra-red Analysis, Electro-chemical
- Specification:
 - Response time:<60s
 - **Resolution time:** 0,1 pmm
 - Measuring range: 0 To 500 ppm
 - Accuracy: ±3.0% of reading or ±3 ppm

For CO₂

- Technology:
 - NDIR (non-dispersive infrared)
- Specification:
 - Response time: <20s
 - Resolution: 1 ppm
 - Measuring range: 0 à 5000ppm
 - Accuracy: ±3.0% of reading or ±50 ppm



For NO₂

- Technology:
 - chimiluminescence
- Specification:

• Response time: <60s

• Resolution time: 10 s

• **Measuring range**: 0 to 150 mg/m3

• **Accuracy** : +/- 1% FS