

Airlab micro-sensors

Challenge 2023

Use for which sensor performance was best:
Outdoor Air Monitoring

WT1^{V1.3}

by **ellona**



Jury's opinion

The WT1 provided an overall **very good performance in terms of accuracy in the current edition**, with **excellent quality for NO₂**, achieving **the best performance** for the French deployment. **Its PM₁, PM_{2.5} and O₃ measurements has also very good performance.** It provides an adequate list of targeted pollutants. However, the addition of PM₁₀ would also be welcomed for monitoring applications. It has **complete data recovery options, real-time notifications, and is relatively easy to setup.** As such, **it scores very well in terms of utility and fares also well for usability.** It is penalized, however, for its significant size and its cost, which remains relatively high compared to other competitors.

Measured pollutants

- CH₂O
- CO
- CO₂
- VOC
- H₂S
- NH₃
- NO
- ✓ NO₂ (NO_x)
- ✓ O₃
- ✓ PM₁
- ✓ PM_{2.5}
- PM₁₀
- SO₂
- Particle number (concentration)

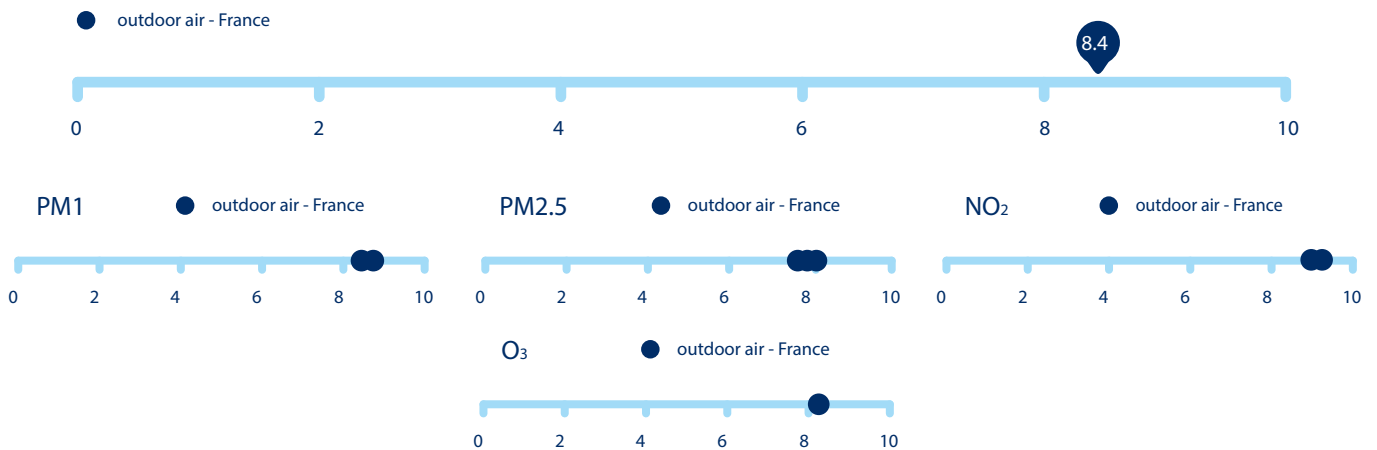
Other measurements

- ✓ Temperature
- ✓ Humidity
- ✓ Odours
- ✓ GPS
- Atmospheric pressure
- Luminosity
- ✓ Acoustic comfort
- Anemometer

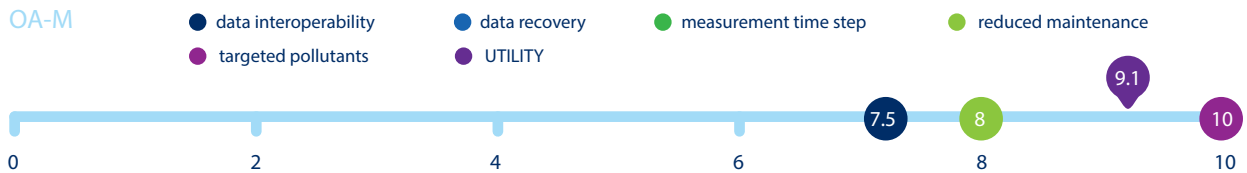
Data storage location: CLOUD (GERMANY, FINLAND)
The hosting provider is a German company.

Detailed report

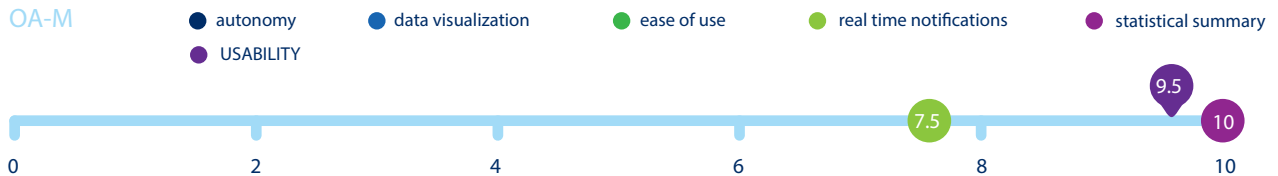
• ACCURACY on 3 microsensors based on the SET method (Fishbain et al. 2017)



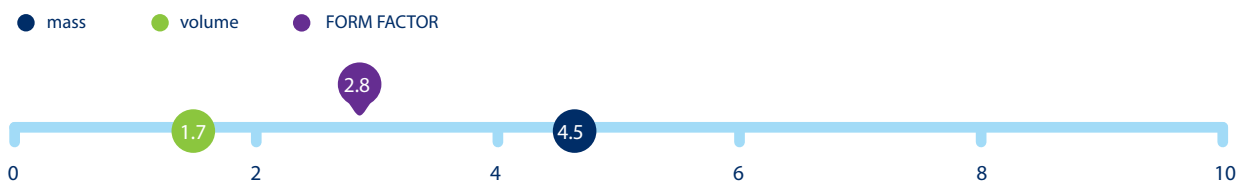
• UTILITY the capacity of a sensor system to provide the essential functionalities for accomplishing the application objectives



• USABILITY the ability of the candidate solution to provide the conditions for its users to perform the tasks safely, effectively, and efficiently while enjoying the experience



• FORM FACTOR relates to how much of a physical burden the device represents for operations like transportation or installation



• COST investment and running costs over 3 years

