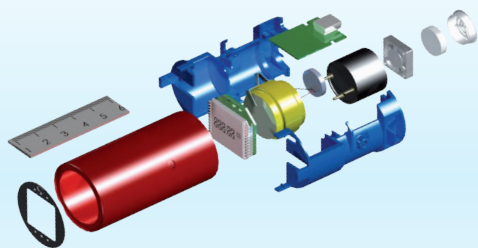
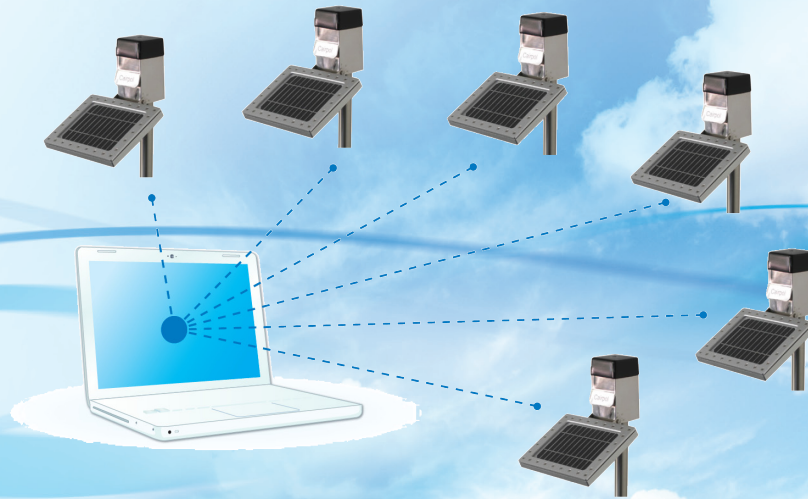


# Miniature air quality monitoring systems



## DESCRIPTION:

Cairsens is an integrated system consisting of an amperometric sensor, a dynamic air sampling with a patented filter, and an electronic circuitry which allows a direct real time display of the measured value and status complete with internal data logging. Reliability of the measurement is achieved by limiting the effect of humidity variations by using a gas specific inlet filter combined with dynamic air sampling system. The high quality of amperometric sensor allows specific measurement, comparable to the reference methods.

The miniaturisation of the micro-sensor and the very low power consumption allows easy deployment of stand-alone **Cairtub** station and wireless, real-time networks via **Cairnet** for autonomous operation.

## APPLICATIONS:

- Monitoring fugitive emission like odour on WWT plants,
- Dynamic pollution mapping
- Ambient air pollution study
- Indoor air quality measurement
- Chronic exposure evaluation
- Individual health survey
- Epidemiologic study

## FEATURES:

- Simple, reliable, cost effective
- Low cross sensitivity
- ppb levels detection
- No maintenance required, no need for re-calibration
- Stand alone version
- Immediate operation
- Shelf life: 1 year

# Miniature air quality monitoring systems

## SPECIFICATIONS :

- LCD display with levels and time exposure
- Internal data logging capacity: up to 1 year
- Internal microprocessor for value and time calculation
- Low battery indication
- Operating time: 24 to 36 Hours when fully charged (allow for a recharge each day for optimum use)
- Power supply: 5VDC /200 mA rechargeable by USB via PC or 220V/110V with 5V adaptor
- Output: USB (RS 232 or UART on demand)
- Dimensions: diameter 32 mm (1,26»), lenth 62 mm (2,44»)
- Weight: 55 g (1,94 oz)
- IP 42(according IEC60529)
- Storage condition: 5 to 20°C (41°F to 68°F), 10 to 90% HR, 1013+/-200 mbar (14,69 +/-2,90 psi)
- Operating condition: -20°C to +45 °C(-4°F to 113°F), 10 to 90%HR, 1013 mbar +/- 200 mbar (14,69 psi+/-2,90 psi)
- Electric stl:CEI/UL/CSA N°61010-1: 2008 / EN 61010-1:2001

\* specification subject to change

## MAIN OPTIONS:

**Cairtub:** 21 days of power autonomy, easy to install or re-locate (small size)

**Cairnet:** wireless connection, long distance radio or GPRS communication (up to 5 km / 3,1 miles) and battery powered by solar panel

**Software:** on line data management and display with Cairmap, report editing and web display (options on request)

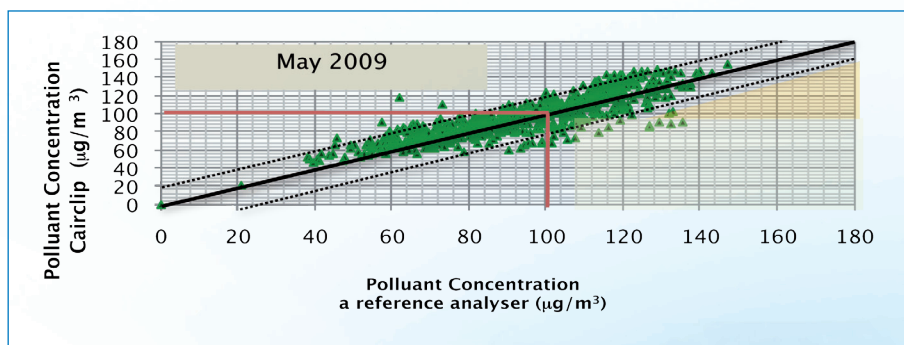


	Ranges:
O <sub>3</sub> / NO <sub>2</sub>	0-250 ppb
NO <sub>2</sub>	0-250 ppb
CO	0-20 ppm
H <sub>2</sub> S / CH <sub>4</sub> S	0-1000 ppb / 0-2000 ppb / 0-20 ppm / 0-200 ppm
NH <sub>3</sub>	0-25 ppm
SO <sub>2</sub>	0-1000 ppb
CH <sub>2</sub> O / solvants organiques	0-1000 ppb
COVnM	0-16 ppm
PM2.5	0-250 µg/m <sup>3</sup>

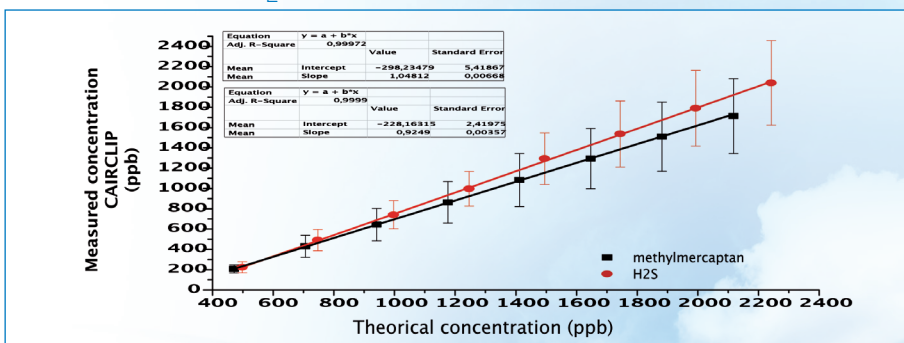
## MEASUREMENT PRINCIPLE:

The amperometric sensor consists of three electrodes: the working electrode (anode) and the counter-electrode (cathode) and the reference electrode. The gas to be analyzed is difused through a membrane to the sensitive electrode. Depending of the gas, oxydation takes place at the anode, or reduction at the cathode. The electrical signal generated between the two electrodes is proportionnal to the concentration.

## STUDY CASE: O<sub>3</sub> AND NO<sub>2</sub> MONITORING



## STUDY CASE: H<sub>2</sub>S MONITORING



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