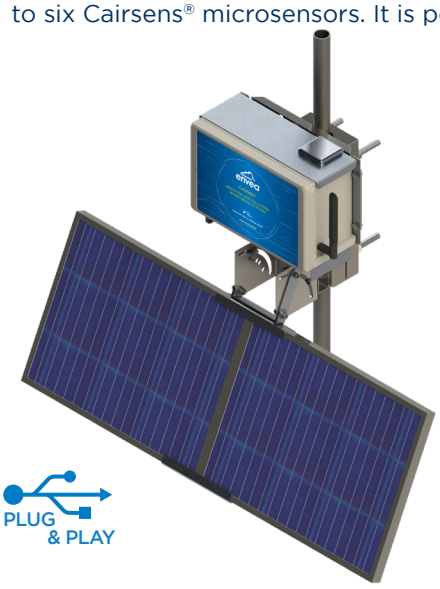
MINI-STATIONS
CAIRNET

Autonomous networks of sensor-based mini-stations

AIR QUALITY MONITORING SYSTEMS

"40 years of experience in the field of environmental monitoring to the benefit of our micro-sensors"

Cairnet® device is a real-time standalone and networkable air-monitoring station including up to six Cairsens® microsensors. It is powered by solar panels and offers cellular communication.



Cairnet® enables you to cost-effectively monitor dust and gas and gives a complete picture of the environmental impact of your operations.

It offers unprecedented flexibility in producing accurate and dynamic air quality measurements across a broad range of industries and applications.

MAIN BENEFITS - *New*

- Real time, continuous and simultaneous measurement and monitoring of **up to 6 parameters** among **H_2S/CH_4S, NH_3, nmVOC, O_3/NO_2, NO_2, CO, SO_2, PM**.
- Measurement of **environmental parameters**: temperature, relative humidity and pressure
- **Plug & Play Network**: automatic pairing (Cairsens® / Cairnet® / Caircloud®)
- **Dynamic sampling** and improved protection against moist and/or corrosive environments
- **Optional: Ultrasonic anemometer** to measure wind direction and speed. Autonomous thanks to its integrated solar panel and battery

- Automated data saving (micro SD card) and push : no consequence in case of lost communication service
- Communication frequency and measured data volume **adapted automatically** to the autonomy of the station
- **Very high sensitivity** to capture low level gas and particulate concentrations
- Modular, easy to use and move on-site: **no cables**
- Cairnet® requires **only annual maintenance**: when sensors should be renewed
- **Operating cost savings**: process adjustment & Improvement of local communication (neighbors & authorities)
- Possibility to set up **hybrid AQMS networks** (reference stations & mini-stations)

MAIN APPLICATIONS

- **Odor monitoring:** WWTP, recycling, pulp and paper manufacturing, sewerage treatment facilities, refineries
- **Indoor and outdoor air quality monitoring:** smart cities, road-side & tunnels, schools, airports, ship terminals...
- **Process leak detection** and monitoring of fugitive emissions: quarries, storage facilities, mines, manufacturing plants
- Forecasting of industrial fence line emissions
- Environmental impact assessments
- **Health and safety:** mines, industrial sites, construction
- Mapping and modelling pollution sources

IT'S SO SMALL THAT IT FITS EVERYWHERE

DATA ACQUISITION

DATA PROCESSING

CairCLOUD

SERVICES

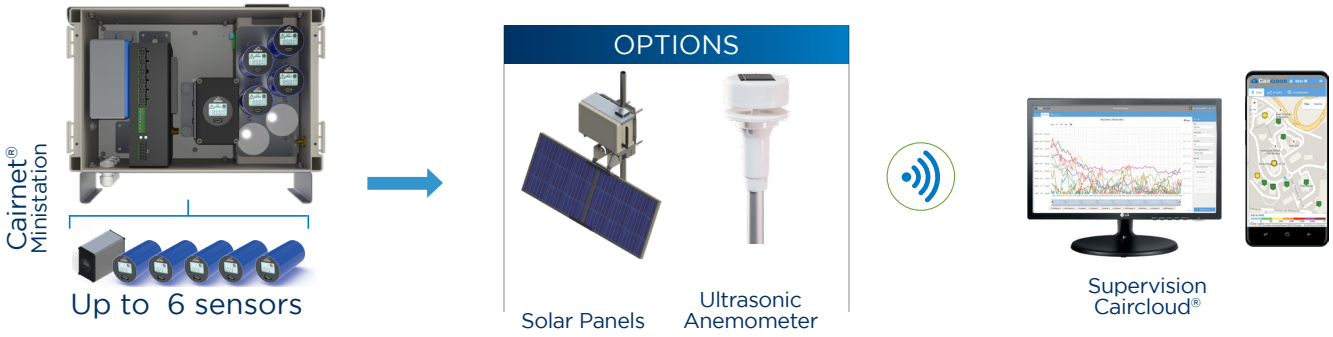
STORAGE

The intelligent and user-friendly Caircloud® web-based interface allows easy, continuous and real-time data acquisition, processing and the management of unlimited sensors' or Cairnet® mini-stations.

*Cairsens® sensors are manufactured in France and calibrated in our metrological laboratory using Standard Reference AQMS monitors. Each Cairsens® is shipped with a **calibration certificate.**

A VERSATILE SOLUTION, READY TO USE

Cairnet® is a real-time air-monitoring mini-station featuring up to 6 Cairsens® micro-sensors inside a waterproof enclosure. Thanks to its cellular communication and solar panels, Cairnet® enables you to cost-effectively monitor dust and gases, with centralized data management in the cloud (Caircloud®).

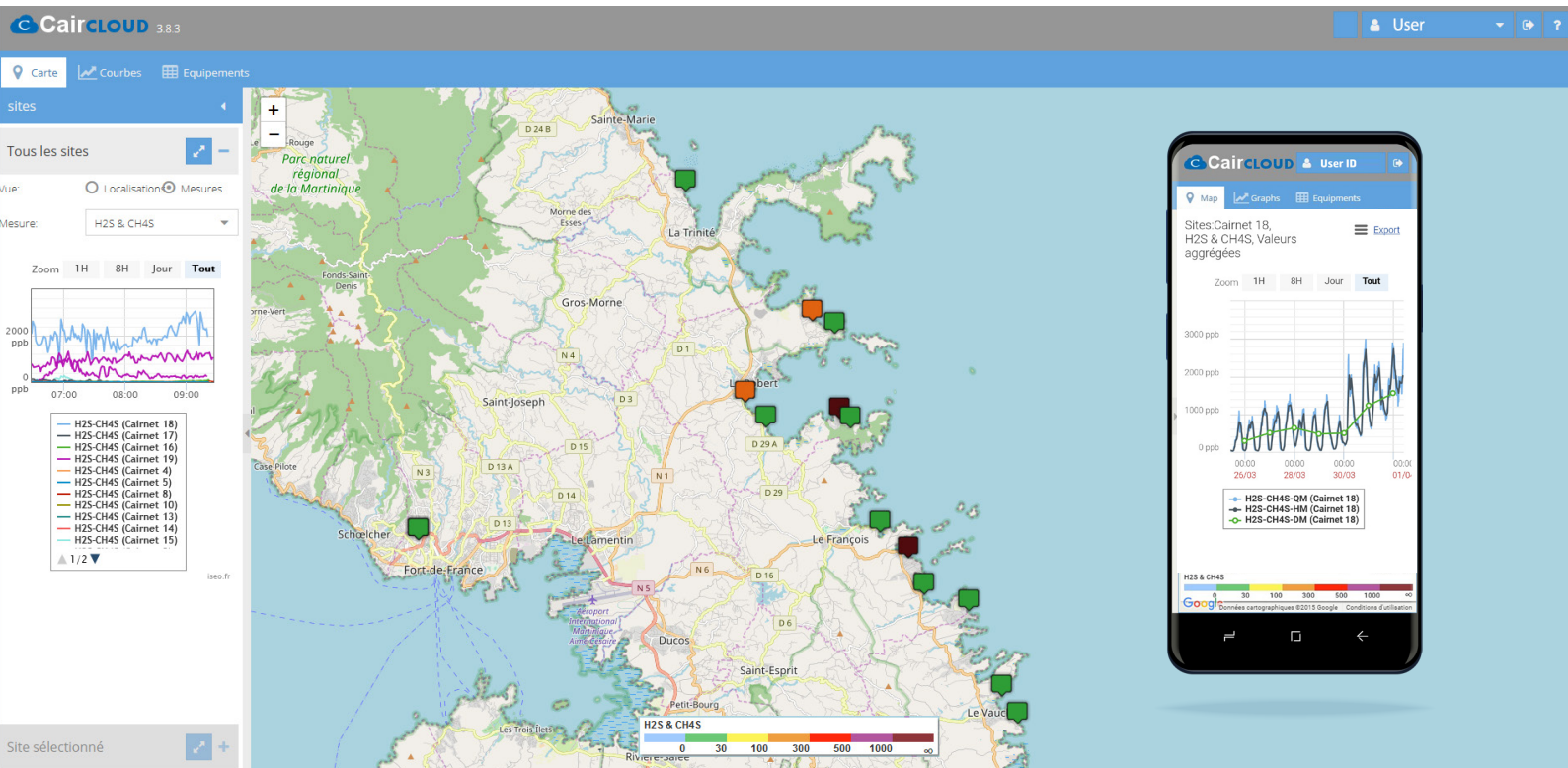


ACCESS YOUR DATA WHEN, AND WHERE YOU WANT

CAIRCLOUD®

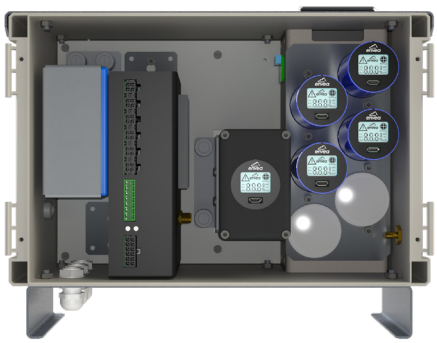
- **Remote diagnosis:** Real-time monitoring of Cairsens® sensors' lifetime, battery charge and power supply
- Data export via **API** REST, FTP server, SFTP server ...
- Secured browser (from mobile phone, tablet or PC)
- Friendly and adaptive user interface
- **Secured database** hosted on our server
- **Real-time monitoring** and management of all sites through only one interface
- **Dyamic** air quality data view: tables, graphs, filters...
- Data storage for **up to 3 years**
- **Data export** (.xlsx, .csv, .pdf, .jpeg...)

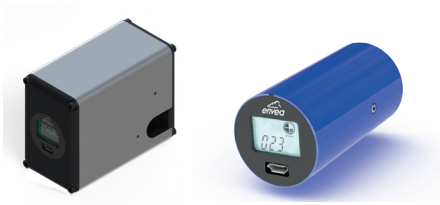
Provided data is compatible with Air Quality Data Acquisition systems and databases such as the XR© software from ENVEA



MEASURABLE PARAMETERS

Pollutant	Range (ppb)	Certified detection limit (ppb)*	Resolution (ppb)	Order Codes
NO_2	0-250	20	1	A40-0405
O_3 / NO_2	0-250	20	1	A40-0406
SO_2	0-1,000	50	1	A40-0407
CO	0-20,000	50	1	A40-0404
H_2S / CH_4S	0-1,000 0-20,000 0-200,000	10 30 200	1	A40-0401 A40-0402 A40-0403
NH_3	0-25,000	500	1	A40-0408
nmVOC	0-16,000 0-2,000	500 200	1	A40-0409 A40-0410
PM10 / PM2.5 / PM1	0-1000 µg/m³	< 5 µg/m³	0.01 µg/m³	A40-0414





CAIRNET® TECHNICAL SPECIFICATIONS

Power supply	8 to 30 V DC / 2.5 A or battery (included)
Battery included	3.7 V - 22 Ah, Li-Ion rechargeable on 18VDC / 2A or via solar pannels (option)
Solar Panels Kit (option)	27 Watts. Mounting bracket included
Control & Data Treatment Board	Internal microprocessor for data acquisition, power and communication managment etc. Embedded Real-Time-Clock (auto-adjusted at every communication)
Wireless communication	Cellular technology LTE - 3G / 4G or more (SIM card optional for European countries, not provided for other countries) Regulatory compliance: R&TTE directive 1999/5/EC, Japan JRF/JPA - FCC - IC
Data storage	• Internal storage on micro SD card of all data in case of loss of cellular communication • Cairsens® internal memory
Mounting	Fixation kit for pole (Ø50 mm max) included.
Dimensions of the Cairnet® housing with fixation kit & antenna	300 x 215 x 257 mm (LxHxW)
Dimensions of the solar Panels with its fixation kit	800 x 410 x 100 mm (LxHxW)
Weight of the Cairnet® housing	4 Kg
Weight of the Solar Panels kit	4,9 Kg
Environmental using conditions	-20°C to +50°C / RH 10% to 90%
Option: ultrasonic anemometer (article code A40-0220)	Wind speed: • Range: 1 - 40 m/s • Sensitivity: 0.13 m/s Wind direction: • Range: 0 – 359° • Sensitivity: +/- 1.5° • Battery 600mA / 3.2 mV rechargeable via solar panel (integrated) • Autonomy: 7 days • Weight & size (sensor head + tube): 290 g / ø 64 mm - height 400 mm • IP67 Rating

ENVEA
111 Bd Robespierre / CS 80004
78300 Poissy Cedex 4 - FRANCE
☎ +33(0)1 39 22 38 00
✉ info@envea.global

ISO 45001:2018
ISO 14001:2015
ISO 9001:2015
CERTIFICATION

More information & downloads:
envea.global/cairnet/faq-downloads