**envea**

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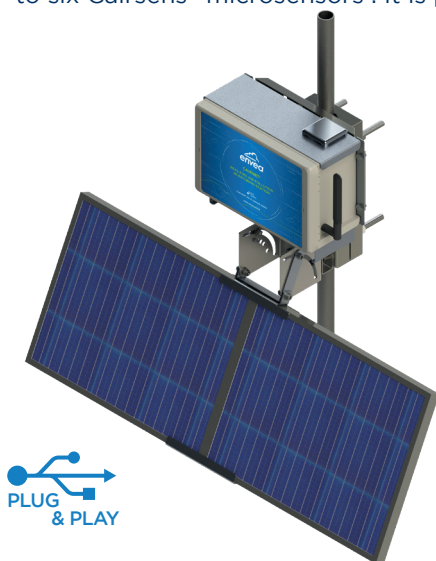
Cairnet® enables you to cost-effectively monitor dust and gas and gives a complete picture of the environmental impact of your operations.

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

PLUG & PLAY

CairCLOUD

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**. Plus environmental parameters: temperature, relative humidity and pressure.
- **Plug & Play Network**: automatic detection, linking and configuration of the network (Cairsens® / Cairnet® / Caircloud®) with no manual intervention required
- Integrated manifold allowing a **dynamic sampling**. Electronic compounds are sealed & protected from moisture and corrosive ambient air.
- 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 concentrations (down to ppb)
- 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. Every sensor shipped includes 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®).


Cairnet® Ministation

Up to 6 sensors

OPTIONS

Solar Panels   Weather Station

Supervision Caircloud®
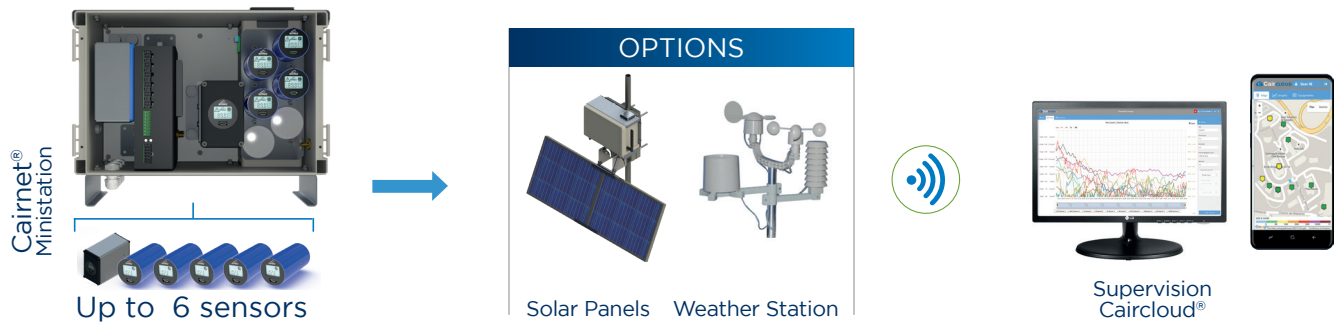
ACCESS YOUR DATA WHEN, AND WHERE YOU WANT

 CAIRCLOUD®

- *New* **Geolocation** of measuring spots on interactive map
- *New* **Remote diagnosis:** Real-time monitoring of Cairsens® sensors' lifetime, battery charge and power supply
- *New* **Data acquisition of weather parameters** from any station

- 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...)

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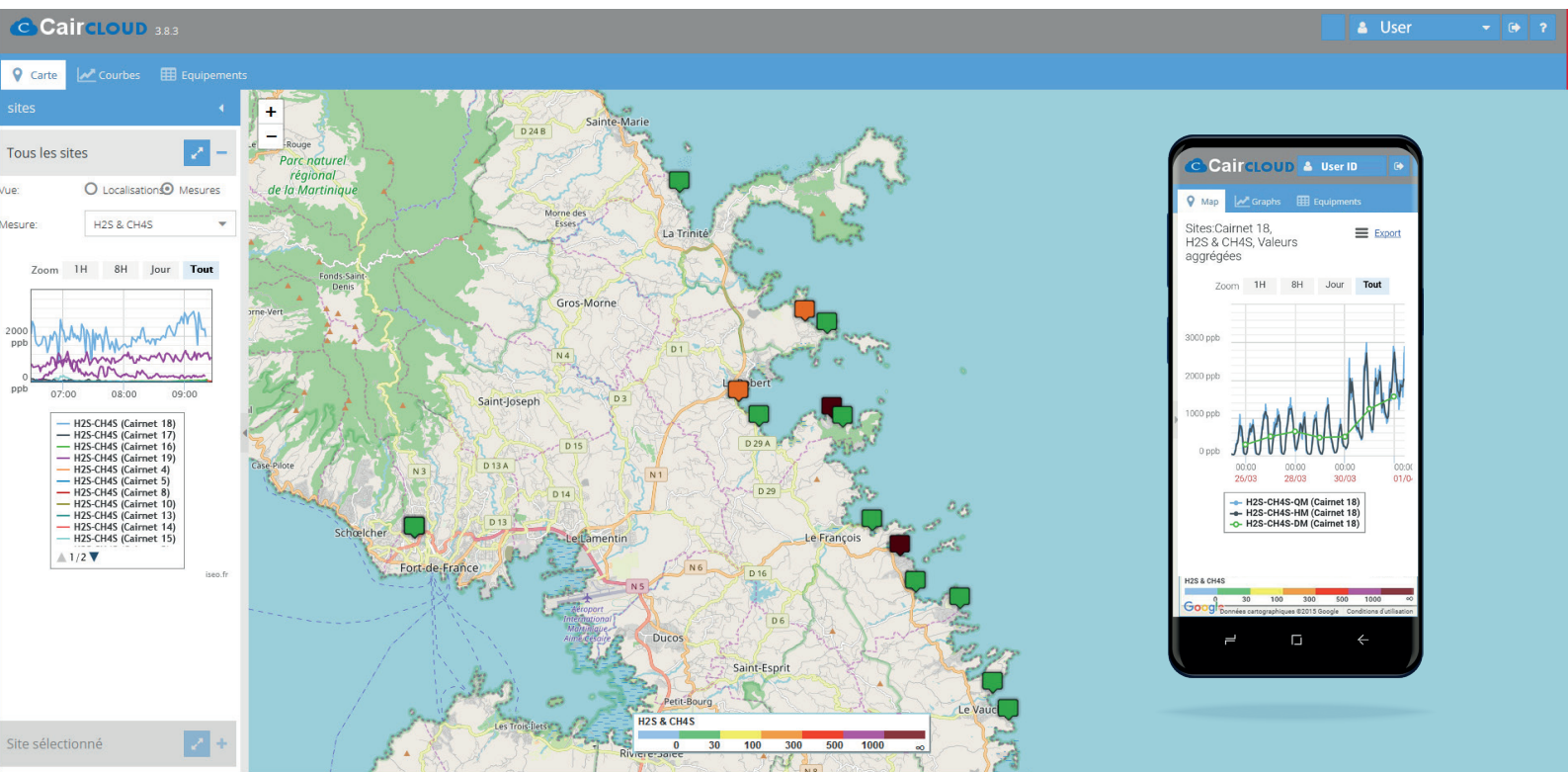
MEASURABLE PARAMETERS

Pollutant	Range (ppb)	Certified detection limit (ppb)*	Resolution (ppb)	Order Codes
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
O_3 / NO_2	0-250	20	1	A40-0406
NO_2	0-250	20	1	A40-0405
CO	0-20,000	50	1	A40-0404
SO_2	0-1,000	50	1	A40-0407
PM10 / PM2.5 / PM1	0-1000 $\mu g/m^3$	< 5 $\mu g/m^3$	0.01 $\mu g/m^3$	A40-0414

CAIRNET® TECHNICAL SPECIFICATIONS

Power supply	8 to 30 V DC / 2.5 A or battery + SP
Battery included	3.7 V - 22 Ah, Li-Ion
Solar Panels Kit (option)	27 Watts (with 2 panels). 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)
I/O Login & local communications	RS485/RS232 for RTU Modbus, RJ45 for TCP-IP Modbus SDI12 for acquisition of weather parameters (Availability: Spring 2021)
Wireless communication	Cellular 3G, 4G LTE (SIM not included) - Solar Panels kit: 4,9 Kg (for 2 pcs)
Data storage	Internal Cairsens memory. Data buffering for back up if communication is lost
Mounting	Fixation kit for pole, tripod, mast, wall, etc. (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	800x410x100 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 / HR 10% to 90%

CELLULAR TECHNOLOGY:

- **Technology and frequency bands:** LTE (1800, 2100, 2600 MHz), WCDMA (800,1700, 2100 MHz), GPRS/Edge (850 MHz, 900 MHz, 1800 MHz, 1900 MHz)

- **Download up to 100 Mbps, Upload up to 50 Mbps**

- **Regulatory compliance:** R&TTE directive 1999/5/EC Japan JRF/JPA - FCC – IC

COMMUNICATION MODE:

- **Wireless / Cellular:** suitable for large surface network deployments, industrials & urban sites covered by the network.

- **Serial / Modbus:** suitable for local spot monitoring for applications such as health and safety, process leakage detection or area not covered by telephone network

CAIRNET_EN_12.2020 - ENVEA Group has a policy of continuous improvement of its products and we reserve the right to update or modify specifications without prior notice.

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

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