ethera
Innovation in the air

Catalogue

Sections

Ethera

Measurement devices

Consumables

Options

Services

Awareness-raising tools

Purification

Ethera

Founded in 2010, Ethera is specialised in designing and manufacturing air diagnostic, monitoring and treatment systems. We aim at delivering accurate, sturdy and turnkey solutions to our customers, including professional end users, industries and governments.

Ethera is committed to providing their clients with the best solutions of assessing and improving air quality while adapting to their needs, in order to ensure good air quality in homes, schools, buildings and industrial sites.

Ethera operates as air quality expert in both general and specific applications. In order to deliver high quality services, we always focus on establishing long-lasting relationships with our customers, suppliers and partners.

Our History

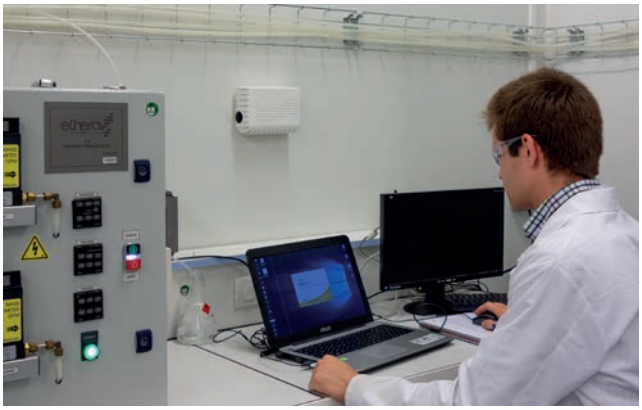
The Ethera Technology is the result yielded from 10 years of researches in a CEA/CNRS laboratory and 9 years of industrialisation in Ethera.

It is based on Ethera's unique experience in nanoporous material and protected by several patents.

The materials are manufactured thanks to an industrial process based on Sol-Gel method. Its porosity results in substantial surface area, allowing trapping large quantities of targeted gases. Thanks to the reagents with colorimetric reaction, it is possible to detect and measure pollutants by tracking the colour variation of the materials, which, initially transparent, darken as they trap more gases.

This technology has enabled us to design highly sensible and selective sensors. Integrated into our measuring stations, these sensors detect and quantify the concentration of chemical pollutants highly accurately, in particular Volatile Organic Compounds (formaldehyde, trichloramine, etc.).

To complete this range of sensors based on nanoporous materials, Ethera has all the skills and equipment to qualify the best air quality sensors that are available on the market and integrate them into its monitors.



Our Credo

In 2017, 7 million people died due to poor air quality. Ethera's founders thus have started working on this major public health issue more than 10 years ago, believing that they could change the situation.

Outdoor air quality is an important issue worldwide, but we believe that indoor air quality is also crucial, even more so as we generally stay indoors for longer time, and the pollution level can be much higher (up to 8 times higher than outside).

We believe that comparing simultaneous data of indoor and outdoor air quality is essential for decision making.

Ethera is committed to its employees with a focus on their well-being and also with a social responsibility to limit the impact of its activities on the environment. For example, we package our products with natural ink and unbleached, recycled cardboard. We recycle our consumables. Travelling is limited to a minimum and videoconferences are encouraged as much as possible.

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Our products

Ethera offers a wild range of solutions aiming at air quality measurement and improvement, all designed and manufactured in France.

Our measuring device NEMo allows one-off diagnostics over periods ranging from one day to one week. NEMo XT is designed for long-term monitoring.

Thanks to various configurations and high modularity, NEMo and NEMo XT can adapt to all types of buildings: schools, public buildings, laboratories, industries, swimming pools...

Connected, our devices can send data directly to a smartphone or tablet via bluetooth or with our Cloud solution via IoT or local networks. We offer products for the following sectors

- Public buildings
- Smart buildings and Green buildings
- Industry
- Smart city

Ethera has designed the NEMo range as future-proof and capable of adapting to changing regulations or new markets.

To do so, NEMo devices can be equipped with additional cards allowing to measure new parameters (pollutants, noise...) or to feature new functions (display, communication solutions...).

In addition, Ethera also offers public awareness-raising indicators for indoor air quality, as well as purifiers or granules for pollutant filtration.

NE-KIT440

NEMo Diagnostic

Formaldehyde - CO_2 - LVOC - Temperature - Humidity - Pressure

NEMo is the first Indoor Air Quality logger to continuously measure containment and formaldehyde with required IAQ performance levels (ppb).

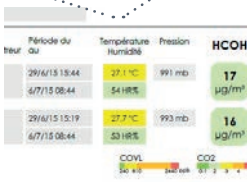
Equipped with rechargeable battery, an internal memory and compliant with IoT networks, it can be installed in any type of buildings.

Automated reporting

Cloud solution with alert management

Mobile application

Continuous formaldehyde measurement at ppb level



Applications

- Indoor Air Quality monitoring in public buildings
- Working environment diagnosis
- Building inspection (in-use or new building upon delivery)
- Air filtration system efficiency checking
- Ventilation system evaluation

Advantages

- Ethera's patented, exclusive technology enabling continuous, specific formaldehyde measurement
- Measure real exposure to the pollutants and identify pollution peaks
- Modular and evolutive, possible to integrate additional sensors (PM 1 / 2.5 / 10, TVOC, Radon...)
- Connected device for real-time access to measurement results (via Sigfox, LoRa, Bluetooth, WiFi, Modbus RS485, LTE...)
- User-friendly data management software, Cloud interface and mobile application
- In compliance with French Decree 2015-1000 on IAQ monitoring for public buildings
- Ready-to-use, automated report with comparison to guide values

Schools, nurseries

Industrial sites

Green Buildings

NEMo Diagnostic

FORMALDEHYDE	
Detection method	Optical reading of nanoporous material (Ethera patented technology)
Measuring range	0 - 2800 ppb (0 - 3444 µg/m³)
Sensitivity	Down to 1 ppb
Sampling method	Passive diffusion
Comparison with DNPH* reference method	< 13%
Storage condition for cartridge	Storage before use: 24 months from the manufacturing date. Store between 2 and 8°C
Interference	No known significant interference
CO_2/CONFINEMENT	
Detection method	Non Dispersive Infrared spectrometry (NDIR)
Measuring range	0 to 5000 ppm
Resolution	1 ppm
Accuracy	± 50 ppm ± 3% of reading value
Response time 90%	< 30 seconds
LVOC (Light Volatile Organic Compounds)	
Detection method	Electrochemical
Measuring range	30 ppb to 5 ppm
Resolution	1 ppb
Accuracy	±40 ppb
Response time 90%	< 30 seconds
Definition	Compounds containing up to 4 carbon atoms (aldehydes, alcohols, etc.)
TEMPERATURE	
Type of sensor	CMOS
Measuring range	-55°C to +125°C
Resolution	0.08°C
Accuracy	± 2°C between -25°C and 100°C (±0.5°C after calibration)
HUMIDITY	
Type of sensor	Capacitive
Measuring range	0 to 95%
Resolution	0.08%
Accuracy	± 3% between 11% and 89% (± 7% for the rest of the range)
PRESSURE	
Type of sensor	CMOS
Measuring range	260 to 1260 hPa
Resolution	± 0.02 hPa
Accuracy	± 2 hPa
GENERAL SPECIFICATIONS	
Sampling interval	10 minutes (customisable) for CO_2, T, P, RH, LVOC; 2 hours for formaldehyde
Conditions of use	Temperature between 0°C and +30°C. Humidity between 30 and 70 %
Embedded memory	> 50 000 measurements
Approx. dimensions (L x l x h) / Total weight	175 x 95 x 75 mm / 450 grams
Power supply and autonomy	5000 mA battery (up to 15 days' autonomy, with measurements every 10 minutes) Plug in power and recharge via microUSB Turn on/off using magnet
Display	3-colour LED indicator, customisable with user mode
Data communication	Connection to PC via MicroUSB or to smartphone via mobile application NEMo View Connecting to Cloud via Sigfox or LoRa as well as other possibilities (Modbus, LTE, etc.)
System requirements	Operating system: Windows 7 or higher, Mac OS 10.9 or higher
Warranty	2 years excluding consumables
Conformity	FR D2015-1000 for confinement (CO_2) and formaldehyde FR D2012-14 for confinement (CO_2)
Contents	1 logger 1 USB charger 1 USB-MicroUSB cable 1 cap and 1 membrane for the formaldehyde diffuser (to change every 6 months) 1 calibration set Ref. 094 for NEMo 1 User Manual NE**Mo**

RELATED PRODUCTS	REFERENCE	QUANTITY
Box of 5 formaldehyde cartridges for NEMo or NEMo XT	NE-FOR011	1
Box of 25 formaldehyde cartridges for NEMo or NEMo XT	NE-FOR012	1
Additional Card Particulate Matter (PM 1 / 2.5 / 4 / 10)	NE-COP250	1
Module Radon for NEMo	NE-COP030	1
Additional Card TVOC (PID) for NEMo or NEMo XT	NE-COP040	1
Other additional cards: NO_2, NO, O_3, CO, NH_3, SO_2, H_2S...	[various]	1
Annual subscription to NEMo Cloud	NE-CLO030 / NE-CLO040	1
Additional Subscription to Sigfox	NE-CLO050	1
Additional Subscription to LoRa	NE-CLO110	1
Additional Subscription to GSM service	NE-CLO060	1
NEMo - Annual Preventive Maintenance	NE-MAI010	1
Additional Battery for NEMo Logger	NE-ALI020	1
Adapter for NEMo CO2 Sensor Calibration	NE-ETA010	1
Suspension Kit for NEMo Logger	NE-SUS010	1

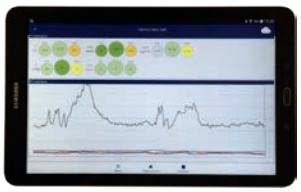
NE-KIT430

NEMo XT - Monitoring

Formaldehyde - CO_2 - LVOC - Temperature - Humidity - Pressure

NEMo XT is the first indoor air quality (IAQ) measuring station to continuously measure containment and formaldehyde with the required IAQ performance levels.

As it is designed for permanent installation, it is usually powered by electricity. However in the standard configuration, it can run on battery for 1 year. Compatible with IoT or local networks, it is easy to install NEMo XT in any type of building.



Wall-mounted tablet for displaying live data

Cloud solution with alerts management

Applications

- Monitoring working environment near production sites and in offices
- Monitoring air quality in energy-efficient buildings (WELL certificate-mandatory).
- Optimising ventilation system
- Indoor Air Quality Monitoring in public buildings
- Helping improve the efficiency of filtration system

Advantages

- Able to measure real expore level to pollutants and identify pollution peaks
- Possible to integrate additional PID sensor for TVOC for industry monitoring
- Exclusive and patented technology for continuous measurement of formaldehyde for formol users

- Modular and evolutive, possible to integrate additional sensors (PM 1 / 2.5 / 10, TVOC, Radon...)
- Connected device for real-time access to measurement results (via Sigfox, LoRa, Bluetooth, WiFi, Modbus RS485, LTE...)
- User-friendly data management software, Cloud interface and mobile application
- Compliant with WELL Certificate Building Standard label

Public buildings | **Industries** | **Green Buildings**

NEMo XT - Monitoring

FORMALDEHYDE	
Detection method	Optical reading of nanoporous material (Ethera patented technology)
Measuring range	0 - 2800 ppb (0 - 3444 µg/m³)
Sensitivity	Down to 1 ppb
Sampling method	Passive diffusion
Comparison with DNPH* reference method	< 13 %
Storage condition for cartridge	Storage before use: 24 months from the manufacturing date. Store between 2 and 8°C
Interference	No known significant interference
CO_2/CONFINEMENT	
Detection method	Non Dispersive Infrared spectrometry (NDIR)
Measuring range	0 to 5000 ppm
Resolution	1 ppm
Accuracy	± 50 ppm ± 3 % of reading value
Response time 90%	< 30 seconds
LVOC (Light Volatile Organic Compounds)	
Detection method	Electrochemical
Measuring range	30 ppb to 5 ppm
Resolution	1 ppb
Accuracy	±40 ppb
Response time 90%	< 30 seconds
Definition	Compounds containing up to 4 carbon atoms (aldehydes, alcohols, etc.)
TEMPERATURE	
Type of sensor	CMOS
Measuring range	-55°C to +125°C
Resolution	0.08°C
Accuracy	± 2°C between -25°C and 100°C (±0.5°C after calibration)
HUMIDITY	
Type of sensor	Capacitive
Measuring range	0 to 95 %
Resolution	0.08 %
Accuracy	± 3 % between 11% and 89% (± 7 % for the rest of the range)
PRESSURE	
Type of sensor	CMOS
Measuring range	260 to 1260 hPa
Resolution	± 0.02 hPa
Accuracy	± 2 hPa
GENERAL SPECIFICATIONS	
Sampling interval	10 minutes (customisable) for CO_2, T, P, RH, LVOC; 2 hours for formaldehyde
Conditions of use	Temperature between 0°C and +30°C. Humidity between 30 and 70 %
Approx. dimensions (L x l x h) / Total weight	190 x 135 x 70 mm / 520 grams
Power supply and autonomy	· Lithium battery 3.6V - 17Ah (type D with connector), autonomy up to 1 year with measurements every 10 minutes and standard configuration · Power supply (DC 5V - 1A) mandatory when adding new parameters or integrating additional cards
Display	LED indicator and NEMo Cloud web interface
Data communication	Connection to PC via MicroUSB or to smartphone via mobile application NEMo View Connecting to Cloud via Sigfox or LoRa as well as other possibilities (Modbus, LTE, etc.)
System requirements	Operating system: Windows 7 or higher, Mac OS 10.9 or higher
Warranty	2 years excluding consumables
Conformity	FR D2015-1000 for confinement (CO_2) and formaldehyde FR D2012-14 for confinement (CO_2) WELL Building Standard - element 18
Contents	1 wall-mounted station 1 5V power supply 1 user guide 1 calibration set Ref. 094 for NEMo

RELATED PRODUCTS	REFERENCE	QUANTITY
Box of 5 formaldehyde cartridges for NEMo or NEMo XT	NE-FOR011	1
Box of 25 formaldehyde cartridges for NEMo or NEMo XT	NE-FOR012	1
Additional Card Particulate Matter (PM 1 / 2.5 / 4 / 10)	NE-COP250	1
Additional Card TVOC (PID) for NEMo or NEMo XT	NE-COP040	1
Other additional cards: NO_2, NO, O_3, CO, NH_3, SO_2, H_2S...	[various]	1
Annual subscription to NEMo Cloud	NE-CLO030 / NE-CLO040	1
Additional Subscription to Sigfox	NE-CLO050	1
Additional Subscription to LoRa	NE-CLO110	1
Additional Subscription to GSM service	NE-CLO060	1
NEMo XT - Annual Preventive Maintenance	NE-MAI090	1
NEMo Cartridge Container Pack	NE-ENT011	1
Communication Module Modbus for NEMo XT, XT Mini and Outdoor	NE-COP160	1

NE-KIT470

NEMo XT *Mini*

CO_2 - Particulate Matter - LVOC - Light - Temperature - Humidity - Pressure

Staff costs could represent up to 92% of the total costs of commercial buildings*! Providing an optical Quality of Working Life shows the company's commitment in implementing a much-appreciated Corporate Social Responsibility (CSR) system, improving employees' performances thus reducing employee-related costs.

NEMo Building is a monitoring station specially designed for Smart and Green buildings.

It integrates all the parameters of Quality of Working Life in one station: comfort (temperature and humidity); well-being (light, noise) and Indoor Air Quality – health (CO_2, VOC and articulate matter).

With a reasonable price and compatible with IoT platforms (Sigfox, LoRa, LTE cat M1) or local networks (Modbus), it's easy to set the station up in all kinds of buildings in large numbers, in order to collect all the information that is necessary for smart building management (HVAC system, blinds and windows, lighting management...).

Thanks to their experience in professional measuring and indoor air quality, Ethera is now able to meet the requirements from building managers by ensuring a high quality of measurement and the stability of their devices over time.

Applications

- Monitoring air quality and well being-related parameters in Smart and Green buildings
- Monitoring air quality in energy-efficient buildings (WELL certificate-mandatory).
- Optimising ventilation system
- Indoor Air Quality Monitoring in public buildings
- Helping improve the efficiency of filtration system

Advantages

- Able to monitor all the health-related parameters
- Easy to deploy in the whole building with low-cost solution
- Real-time measuring with the connected device (Sigfox, LoRa, Bluetooth, LTE-M, Modbus)
- Compatible with most Building Management Systems on the market
- User-friendly data management software, Cloud interface and mobile application
- Compliant with WELL Certificate Building Standard label

*According to WELL Building Standard

NE-KIT600

NEMo Outdoor

LVOC - Temperature - Humidity - PM 1/2.5/10 - NO_2 - NO - O_3 - SO_2 ...

NEMo outdoor is a professional monitoring station for Outdoor Air Quality (OAQ) allowing to continuously measure various parameters thanks to its high modularity.

Operating on battery, power supply or solar panel, it is equipped with an internal memory and is able to connect to different IoT platforms. It can be easily installed on a building or on street furniture.

Automated reporting

Cloud solution with alerts management

Continuous measurement of major OAQ-related parameters

Mobile application

Applications

- Monitoring Outdoor Air Quality on the scale of a city or a territory
- Detecting chemical pollutant emission from industry
- Managing air quality on construction sites
- Setting up a monitoring network consisting of the devices for both outdoor and indoor air quality to optimise building management

Advantages

- Highly modular and customisable, allowing the user to configurate the station with various sensors
- Available sensors: PM 1/2.5/10, TVOC, NO, NO_2, CO, O_3, SO_2, NH_3, H_2S...
- Measure real exposure to the pollutants and identify pollution peaks
- Connected device for real-time measurement results (Sigfox, LoRa, WiFi, Modbus RS485, LTE...)
- User-friendly data management software, Cloud interface and mobile application
- Ready-to-use, automated report with comparison to guide values

Smart City

Insudtry

Construction sites

ethera

Measurement devices

NE-KIT460

NEMo FU (Formalin User)

Formaldehyde - CO_2 - LVOC - TVOC - Temperature - Humidity - Pressure

NEMo FU is a solution dedicated to monitor environments where the formaldehyde risk is high. Pathology laboratories, thanatopraxy centres or industries using products containing formaldehyde can ensure that the air breathed by their employees complies with the Occupational Exposure Limits (OEL).

NEMo FU is the only station capable of continuously and specifically measuring formaldehyde concentration (without interference from other compounds). Therefore, it allows to compare formaldehyde level with OEL guide values as opposed to stations using non-specific sensors.

NEMo FU is designed to be installed in a permanent position, and is composed of a NEMo XT station adapted for this use and a remote screen allowing a visualization of the level of risk in real time. Compatible with IoT or local networks, it is easy to install in any type of building.

Wall-mounted screen to display real-time data

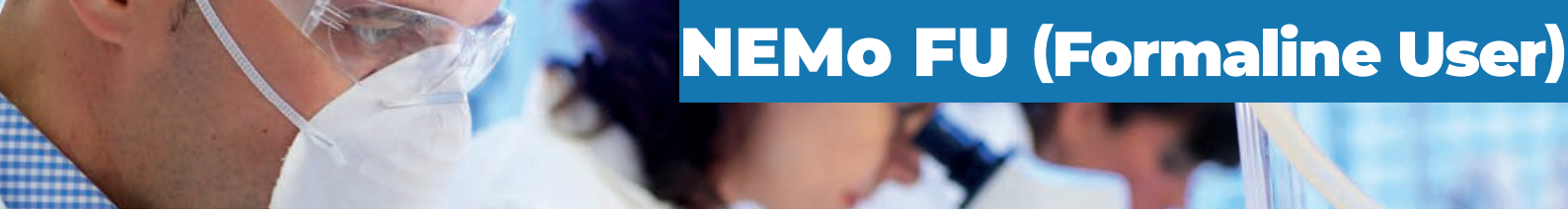
Cloud solution with alerts management

Applications

- Monitoring environments exposed to formaldehyde risk (thanatopraxy centres, anatomopathology laboratories, industries using formaldehyde products, etc.)
- Optimising ventilation system
- Helping improve the efficiency of formaldehyde filtering system

Advantages

- Ethera's patented, exclusive technology enabling continuous, specific formaldehyde measurement for formalin users
- Measure real exposure to formaldehyde and identify pollution peaks
- Possible to integrate Modbus module to monitor air change rate regarding formaldehyde concentration
- Possible to integrate a PID sensor for TVOC measurement as a complement
- Connected device for real-time access to measurement results (via Sigfox, LoRa, Bluetooth, WiFi, Modbus RS485, LTE...)
- User-friendly data management software, Cloud interface and mobile application



NEMo FU (Formaline User)

FORMALDEHYDE	
Detection method	Optical reading of nanoporous material (Ethera patented technology)
Measuring range	0 - 2800 ppb (0 - 3444 µg/m³)
Sensitivity	Down to 1 ppb
Sampling method	Passive diffusion
Comparison with DNPH* reference method	< 13 %
Storage condition for cartridge	Storage before use: 24 months from the manufacturing date. Store between 2 and 8°C
Interference	No known significant interference
CO_2/CONFINEMENT	
Detection method	Non Dispersive Infrared spectrometry (NDIR)
Measuring range	0 to 5000 ppm
Resolution	1 ppm
Accuracy	± 50 ppm ± 3 % of reading value
Response time 90%	< 30 seconds
LVOC (Light Volatile Organic Compounds)	
Detection method	Electrochemical
Measuring range	30 ppb to 5 ppm
Resolution	1 ppb
Accuracy	±40 ppb
Response time 90%	< 30 seconds
Definition	Compounds containing up to 4 carbon atoms (aldehydes, alcohols, etc.)
TVOC (Total Volatile Organic Compounds)	
Detection method	MOS
Measuring range	0 ppm to 128 ppm
Resolution	0.125 ppm
Accuracy	± 30%
Response time 90%	< 30 seconds
TEMPERATURE	
Type of sensor	CMOS
Measuring range	-55°C to +125°C
Resolution	0.08°C
Accuracy	± 2°C between -25°C and 100°C (±0.5°C after calibration)
HUMIDITY	
Type of sensor	Capacitive
Measuring range	0 to 95 %
Resolution	0.08 %
Accuracy	± 3 % between 11% and 89% (± 7 % for the rest of the range)
PRESSURE	
Type of sensor	CMOS
Measuring range	260 to 1260 hPa
Resolution	± 0.02 hPa
Accuracy	± 2 hPa
GENERAL SPECIFICATIONS	
Sampling interval	10 minutes (customisable) for calculated formaldehyde, CO_2, T, P, RH, LVOC, TVOC 2 hours for specific formaldehyde with cartridge
Conditions of use	Temperature between 0°C and +30°C. Humidity between 30 and 70 %
Approx. dimensions (L x l x h) / Total weight	190 x 135 x 70 mm / 540 grams
Power supply and autonomy	Power supply (DC 5V - 1A)
Display	LED indicator and NEMo Cloud web interface
Data communication	Connection to PC via MicroUSB or to smartphone via mobile application NEMo View Connecting to Cloud via Sigfox or LoRa as well as other possibilities (Modbus, LTE, etc.)
System requirements	Operating system: Windows 7 or higher, Mac OS 10.9 or higher
Warranty	2 years excluding consumables
Contents	1 wall-mounted station 1 additional card for TVOC (technology MOS) 1 5V power supply 1 wall-mounted screen and displaying solution 1 user guide 1 calibration set Ref. 094 for NEMo

RELATED PRODUCTS	REFERENCE	QUANTITY
Box of 5 formaldehyde cartridges for NEMo or NEMo XT	NE-FOR011	1
Box of 25 formaldehyde cartridges for NEMo or NEMo XT	NE-FOR012	1
Additional Card Particulate Matter (PM 1 / 2.5 / 4 / 10)	NE-COP250	1
Additional Card TVOC (PID) for NEMo or NEMo XT	NE-COP040	1
Communication Module Modbus for NEMo XT, XT Mini and Outdoor	NE-COP160	1
Annual subscription to NEMo Cloud	NE-CLO030 / NE-CLO040	1
Additional Subscription to Sigfox	NE-CLO050	1
Additional Subscription to LoRa	NE-CLO110	1
Additional Subscription to GSM service	NE-CLO060	1
NEMo XT - Annual Preventive Maintenance	NE-MAI090	1
NEMo Cartridge Container Pack	NE-ENT011	1

NE-KIT540

NEMo TC - Trichloramine

Trichloramine - CO_2 - LVOC - Temperature - Humidity - Pressure

NEMo TC is the world's first portable pool air quality recorder to continuously measure trichloramine with required air quality level in indoor pools.

Equipped with rechargeable battery, an internal memory and compliant with IoT networks, it can be installed in any type of swimming pools.

Automated reporting

Cloud solution with alert management

Mobile application

Continuous trichloramine measurement at ppb level

Applications

- Monitoring indoor air quality in natatoriums, water parks, spas, hotels, indoor aquatic facilities and thalassotherapy centres etc.
- Air quality control in the agri-food industries using Clean-In-Place (CIP) with chlorinated products
- Prevent occupational diseases as required by the labor code
- Optimising ventilation system

Advantages

- Ethera's patented, exclusive technology enabling continuous, specific trichloramine measurement
- Technology validated by CSTB (Scientific and Technical Centre for Building)
- Measure real exposure to the pollutants and identify pollution peaks
- Modular and evolutive, possible to integrate additional sensors (PM 1 / 2.5 / 10, TVOC, Radon...)
- User-friendly data management software, Cloud interface and mobile application
- Ready-to-use, automated report with comparison to guide values

What is trichloramine?

Trichloramine is responsible for the "chlorine" smell in swimming pools. This molecule is created by reaction between the chlorine used for water disinfection and the organic materials brought by swimmers (sweat, cosmetics, saliva, urine, dead skins...).

It is a very volatile gas that can cause eye, skin and respiratory irritations, or even asthma and rhinitis in case of prolonged exposure. Employees of swimming pool (lifeguards in particular) are particularly exposed. Asthma and rhinitis are recognised as occupational diseases by FR Decree 2003-110 on 11/02/2003.

NEMo TC

TRICHLORAMINE	
Detection method	Optical reading of nanoporous material (Ethera patented technology)
Measuring range	15 ppb to 100 ppb (74 - 492 µg/m³)
Measuring time with 1 cartridge	1 - 24 hours
Sampling method	Passive diffusion
Accuracy	Between 0 - 40 ppb : ±10 ppb ±10%; Between 40 - 100 ppb : ±20 ppb ±10% (average in one day)
Storage condition for cartridge	Storage before use: 6 months from the manufacturing date. Store at ambient temperature (between 15 and 25°C). To be used within 10 minutes after opening the package. Cartridge's maximum life time: 24 hours (subject to trichloramine concentration)
CO_2/CONFINEMENT	
Detection method	Non Dispersive Infrared spectrometry (NDIR)
Measuring range	0 to 5000 ppm
Resolution	1 ppm
Accuracy	± 50 ppm ± 3% of reading value
Response time 90%	< 30 seconds
LVOC (Light Volatile Organic Compounds)	
Detection method	Electrochemical
Measuring range	30 ppb to 5 ppm
Resolution	1 ppb
Accuracy	±40 ppb
Response time 90%	< 30 seconds
Definition	Compounds containing up to 4 carbon atoms (aldehydes, alcohols, etc.)
TEMPERATURE	
Type of sensor	CMOS
Measuring range	-55°C to +125°C
Resolution	0.08°C
Accuracy	± 2°C between -25°C and 100°C (±0.5°C after calibration)
HUMIDITY	
Type of sensor	Capacitive
Measuring range	0 to 95%
Resolution	0.08%
Accuracy	± 3% between 11% and 89% (± 7% for the rest of the range)
PRESSURE	
Type of sensor	CMOS
Measuring range	260 to 1260 hPa
Resolution	± 0.02 hPa
Accuracy	± 2 hPa
GENERAL SPECIFICATIONS	
Sampling interval	10 minutes (customisable) for CO_2, T, P, RH, LVOC 10 minutes for trichloramine (moving average from the previous 30 minutes)
Conditions of use	Temperature between 22°C and 30°C. Humidity between 40 and 70 %
Embedded memory	> 50 000 points
Approx. dimensions (L x l x h) / Total weight	175 x 95 x 75 mm / 450 grams
Power supply and autonomy	5000 mA battery (up to 15 days' autonomy, with measurements every 10 minutes) Plug in power and recharge via microUSB Turn on/off using magnet
Display	3-colour LED indicator, customisable with user mode
Data communication	Connection to PC via MicroUSB or to smartphone via mobile application NEMo View Connecting to Cloud via Sigfox or LoRa as well as other possibilities (Modbus, LTE, etc.)
System requirements	Operating system: Windows 7 or higher, Mac OS 10.9 or higher
Warranty	2 years excluding consumables
Contents	1 logger 1 USB charger 1 USB-MicroUSB cable 1 cap and 1 membrane for the formaldehyde diffuser (to change every 6 months) 1 calibration set Ref. 094 for NEMo 1 User Manual NEMo TC 1 USB key with Profil'air Manager software and manual

RELATED PRODUCTS	REFERENCE	QUANTITY
Box of 5 trichloramine cartridges for NEMo TC or NEMo XT TC	NE-TRI011	1
Box of 25 trichloramine cartridges for NEMo TC or NEMo XT TC	NE-TRI012	1
Annual subscription of 200 trichloramine cartridges for NEMo TC or NEMo XT TC	NE-TRI016	1
Additional card Particulate Matter (PM 2.5 / 10)	NE-COP020	1
Module Radon for NEMo	NE-COP030	1
Additional Card TVOC (PID) for NEMo or NEMo XT	NE-COP040	1
Other additional cards: NO2, NO, O3, CO, NH3, SO2, H2S...	[various]	1
NEMo - Annual Preventive Maintenance	NE-MAI010	1
Additional Battery for NEMo	NE-ALI020	1
NEMo Cartridge Container Pack	NE-ENT011	1
Adapter for NEMo CO2 Sensor Calibration	NE-ETA010	1
Suspension Kit for NEMo Logger	NE-SUS010	1

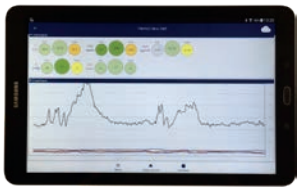
NE-KIT530

NEMo XT TC - Trichloramine

Trichloramine - CO_2 - LVOC - Temperature - Humidity - Pressure

NEMo TC is the world's first monitoring station to continuously measure trichloramine with required air quality level in indoor pools.

As it is designed for permanent installation, it is usually powered by electricity. However in the standard configuration, it can run on battery for 1 year. Compatible with IoT or local networks, it is easy to install NEMo XT in any type of aquatic facilities.



Wall-mounted tablet for displaying live data

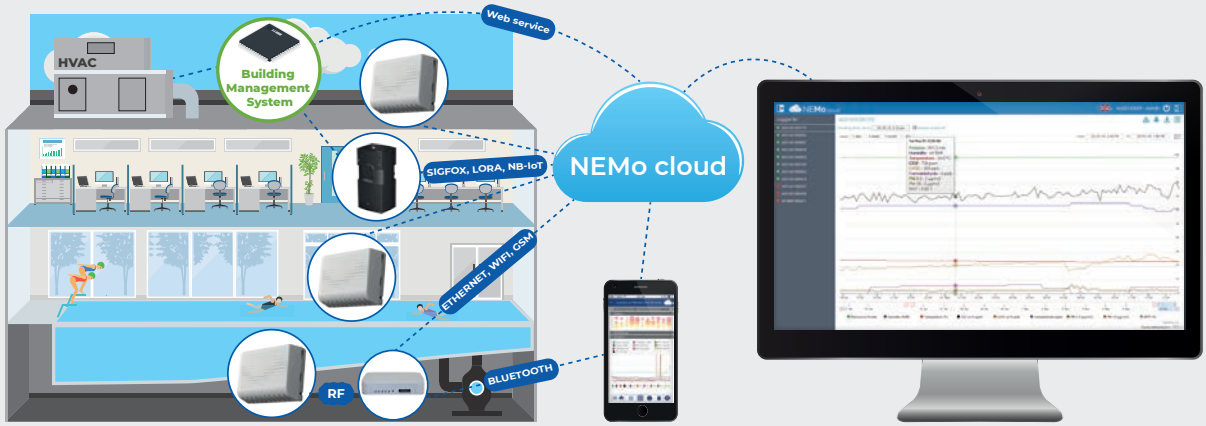
Cloud solution with alerts management

Applications

- Monitoring indoor air quality in natatoriums, water parks, spas, hotels, indoor aquatic facilities and thalassotherapy centres etc.
- Managing air quality in the agri-food industries using Clean-In-Place (CIP) with chlorinated products
- Improving energy efficiency by managing ventilation systems in indoor pools
- Helping improve the efficiency of chlorine-removing system

Advantages

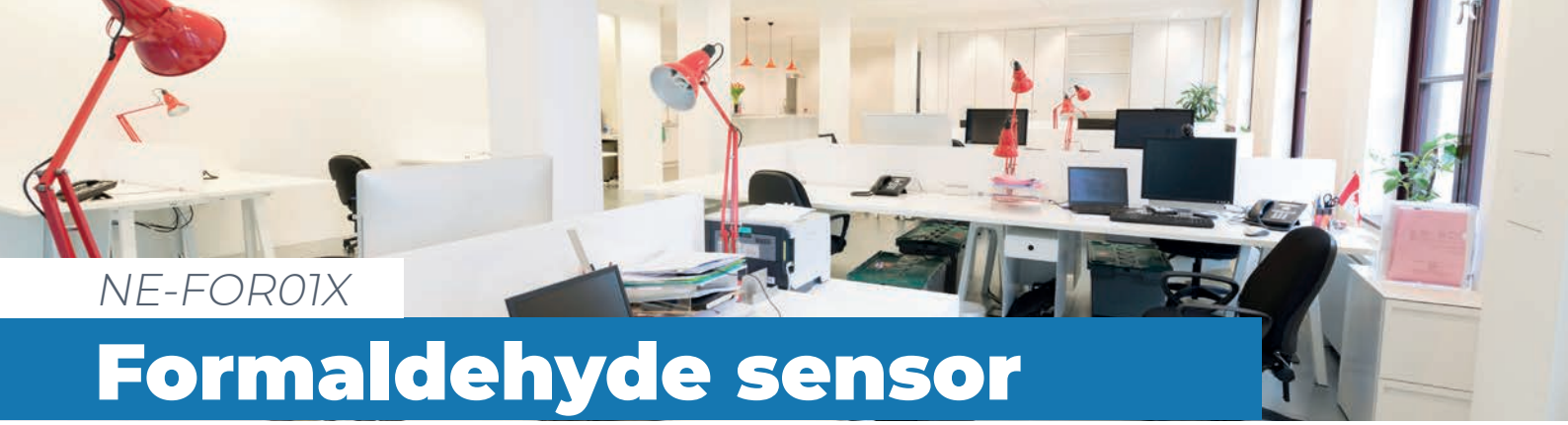
- Ethera's patented, exclusive technology enabling continuous, specific trichloramine measurement
- Technology validated by CSTB (Scientific and Technical Centre for Building)
- Measure real exposure to the pollutants and identify pollution peaks
- Modular and evolutive, possible to integrate additional sensors (PM 1 / 2.5 / 10, TVOC, Radon...)
- Real-time access to measurement results (via Sigfox, LoRa, Bluetooth, WiFi, Modbus RS485, LTE...)
- User-friendly data management software, Cloud interface and mobile application



NEMo XT TC

TRICHLORAMINE	
Detection method	Optical reading of nanoporous material (Ethera patented technology)
Measuring range	15 ppb to 100 ppb (74 - 492 µg/m³)
Measuring time with 1 cartridge	From 1 to 24 hours
Sampling method	Passive diffusion
Accuracy	Between 0 - 40 ppb : ±10 ppb ±10%; Between 40 - 100 ppb : ±20 ppb ±10% (average in one day)
Storage condition for cartridge	Storage before use: 6 months from the manufacturing date. Store at ambient temperature (between 15 and 25°C). To be used within 10 minutes after opening the package. Cartridge's maximum life time: 24 hours (subject to trichloramine concentration)
CO_2/CONFINEMENT	
Detection method	Non Dispersive Infrared spectrometry (NDIR)
Measuring range	0 to 5000 ppm
Resolution	1 ppm
Accuracy	± 50 ppm ± 3% of reading value
Response time 90%	< 30 seconds
LVOC (Light Volatile Organic Compounds)	
Detection method	Electrochemical
Measuring range	30 ppb to 5 ppm
Resolution	1 ppb
Accuracy	±40 ppb
Response time 90%	< 30 seconds
Definition	Compounds containing up to 4 carbon atoms (aldehydes, alcohols, etc.)
TEMPERATURE	
Type of sensor	CMOS
Measuring range	-55°C to +125°C
Resolution	0.08°C
Accuracy	± 2°C between -25°C and 100°C (±0.5°C after calibration)
HUMIDITY	
Type of sensor	Capacitive
Measuring range	0 to 95%
Resolution	0.08%
Accuracy	± 3% between 11% and 89% (± 7% for the rest of the range)
PRESSURE	
Type of sensor	CMOS
Measuring range	260 to 1260 hPa
Resolution	± 0.02 hPa
Accuracy	± 2 hPa
GENERAL SPECIFICATIONS	
Sampling interval	10 minutes (customisable) for CO_2, T, P, RH, LVOC 10 minutes for trichloramine (moving average from the previous 30 minutes)
Conditions of use	Temperature between 22°C and 30°C. Humidity between 40 and 70 %
Approx. dimensions (Lxlxh) / Total weight	190x135x70 mm / 520 grams
Power supply and autonomy	· Lithium battery 3.6V - 17Ah (type D with connector), autonomy up to 1 year with measurements every 10 minutes and standard configuration · Power supply (DC 5V - 1A) mandatory when adding new parameters or integrating additional cards
Display	LED indicator and NEMo Cloud web interface
Data communication	Connection to PC via MicroUSB or to smartphone via mobile application NEMo View Connecting to Cloud via Sigfox or LoRa as well as other possibilities (Modbus, LTE, etc.)
System requirements	Operating system: Windows 7 or higher, Mac OS 10.9 or higher
Warranty	2 years excluding consumables
Contents	1 wall-mounted station 1 5V power supply 1 user guide 1 calibration set Ref. 094 for NEMo TC

RELATED PRODUCTS	REFERENCE	QUANTITY
Box of 5 trichloramine cartridges for NEMo TC or NEMo XT TC	NE-TRI011	1
Box of 25 trichloramine cartridges for NEMo TC or NEMo XT TC	NE-TRI012	1
Annual subscription of 200 trichloramine cartridges for NEMo TC or NEMo XT TC	NE-TRI015	1
Additional card Particulate Matter (PM 2.5 / 10)	NE-COP020	1
Other additional cards: NO2, NO, O3, CO, NH3, SO2, H2S...	[various]	1
Additional Card TVOC (PID) for NEMo or NEMo XT	NE-COP040	1
Annual subscription to NEMo Cloud	NE-CLO030 / NE-CLO040	1
Additional Subscription to Sigfox	NE-CLO050	1
NEMo - Annual Preventive Maintenance	NE-MAI010	1
NEMo Cartridge Container Pack	NE-ENT011	1
Adapter for NEMo CO2 Sensor Calibration	NE-ETA010	1



NE-FOR01X

Formaldehyde sensor

Formaldehyde-measuring sensors for NEMo devices integrate Ethera's innovative and proprietary technology based on ultra-sensitive nanoporous materials.

Thanks to optical reading of the sensors throughout the exposure, the device enables continuous measurement of formaldehyde and thus effectively carry out indoor air quality diagnosis at concentration level down to µg/m³ (ppb).

Depending on the concentration in the room, a cartridge can last up to one week with NEMo (diagnosis) and one month with NEMo XT (monitoring).

The performances can be compared to conventional methods (i.e. chromatography), but the continuous measurement allows a much more detailed evaluation and effective post-diagnosis treatment by selecting periods of interest.

Continuous measurement can therefore significantly improve the representativeness of the sampling and the reliability of diagnosis.

Applications

- Indoor Air Quality monitoring in public buildings
- Assessing working environment near production sites and in the offices
- Carrying out inspection for newly delivered and in-use buildings
- Air filtration system efficiency checking
- Evaluating ventilation system

Advantages

- Continuous and specific measurement of formaldehyde, allowing to calculate the real exposure to formaldehyde (as opposed to conventional sensors measuring average value for one day)
- Possible to identify the pollution peaks

FORMALDEHYDE	
Detection method	Optical reading of nanoporous material (Ethera patented technology)
Measuring range	0 - 2800 ppb (0 - 3444 µg/m³)
Sensitivity	Down to 1 ppb
Sampling method	Passive diffusion
Comparison with DNPH* reference method	< 13 %
Storage condition for cartridge	Storage before use: 24 months from the manufacturing date. Store between 2 and 8°C Cartridge to be used within 10 minutes after opening the package
Lifetime (subject to concentration)	7 days (NEMo) 1 month (NEMo XT - 1 week highly accurate measurement + 3 weeks with moderate accuracy)
Interference	No known significant interference

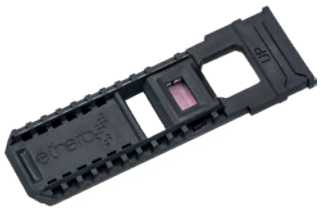
PACKAGING	REFERENCE	QUANTITY
Box of 5 formaldehyde cartridges for NEMo or NEMo XT	NE-FOR011	5
Box of 25 formaldehyde cartridges for NEMo or NEMo XT	NE-FOR012	25

RELATED PRODUCTS	REFERENCE	QUANTITY
NEMo - Connected Indoor Air Quality Logger	NE-KIT440	1
NEMo XT - Indoor Air Quality Monitoring Station	NE-KIT430	1
NEMo FU - Monitoring Station for Occupational Exposure	NE-KIT460	1

NE-TRI01X

Trichloramine sensor

Trichloramine-measuring sensors for NEMo devices integrate Ethera's innovative and proprietary technology based on ultra-sensitive nanoporous materials.



Thanks to optical reading of the sensors throughout the exposure, the device enables continuous measurement of trichloramine and thus effectively carry out indoor pool air quality diagnosis at concentration level down to ten µg/m³ (ppb).

Depending on the concentration in the facility, a cartridge can last up to 24 hours.

The performances can be compared to conventional methods; the continuous measurement allows furthermore a much more detailed evaluation by showing pollution peaks and effective post-diagnosis treatment by selecting periods of interest.

Continuous measurement can therefore significantly improve the representativeness of the sampling and the reliability of diagnosis.

Applications

- Monitoring indoor air quality in natatoriums, water parks, spas, hotels, indoor aquatic facilities and thalassotherapy centres etc.
- Managing air quality in the agri-food industries using Clean-In-Place (CIP) with chlorinated products
- Improving energu efficiency by managing ventilation systems in indoor pools
- Helping improve the efficiency of chlorine-removing system

Advantages

- Continuous and specific measurement of trichloramine, allowing to calculate the real exposure to trichloramine (as opposed to conventional sensors measuring average value for one day)
- Technology validated by CSTB (Scientific and Technical Centre for Building)
- Possible to detect pollution peaks

TRICHLORAMINE	
Detection method	Optical reading of nanoporous material (Ethera patented technology)
Measuring range	15 ppb to 100 ppb (74 - 492 µg/m³)
Measuring time with 1 cartridge	From 1 to 24 hours
Sampling method	Passive diffusion
Accuracy	Between 0 - 40 ppb : ±10 ppb ±10%; Between 40 - 100 ppb : ±20 ppb ±10% (average in one day)
Storage condition for cartridge	Storage before use: 6 months from the manufacturing date. Store at ambient temperature (between 15 and 25°C). To be used within 10 minutes after opening the package. Cartridge's maximum life time: 24 hours (subject to trichloramine concentration)

PACKAGING	REFERENCE	QUANTITY
Box of 5 trichloramine cartridges for NEMo TC or NEMo XT TC	NE-TRI011	5
Box of 25 trichloramine cartridges for NEMo TC or NEMo XT TC	NE-TRI012	25
Annual subscription of 200 trichloramine cartridges	NE-TRI016	200

RELATED PRODUCTS	REFERENCE	QUANTITY
NEMo TC - Connected Indoor Pool Air Quality Logger	NE-KIT540	1
NEMo XT TC - Indoor Pool Air Quality Monitoring Station	NE-KIT530	1

NE-COP250

Particulate Matter (PM1/2.5/4/10)

The particulate matters (PM 1/2.5/4/10) sensor for NEMo or NEMo XT is an additional board allowing the measurement of fine particles and is pre-installed in factory.
PM 1, 2.5, 4 and 10 measurements are carried out with laser diffraction.

Applications

- Diagnosing / Monitoring indoor particulate matter pollution
- Evaluating the impact of outdoor pollution on indoor air quality
- Evaluating the impact of combustion sources (candles, heaters...)
- Helping improve the efficiency of filtration system

Advantages

- Accurate and reliable sensor, selected after Ethera's global research on most sensors available on the market
- Easy to use, as the measurement is automatically included in the existing campaign
- No extra space needed
- Highly robust with long lifetime

FINE PARTICLE	
Detection method	Laser-based light scattering allowing PM 1/2.5 measurement and PM 4/10 estimation
Sampling method	Active
Measuring range	0 - 1000 µg/m³
Resolution	1 µg/m³
Accuracy	10µg/m³ (<100µg/m3) or ± 10% of reading value (>100µg/m³)
Particle detection range	0.3 µm - 10 µm
Sensor lifetime	> 8 years under typical conditions of use (schools, offices...)
GENERAL SPECIFICATIONS	
Approx. dimensions / weight / position	80mm x 50mm x 30mm / 100 grams / internal installation in NEMo
Power supply Impact on NEMo's autonomy	For a device equipped with this optional card only; device in campaign mode with a measurement interval of 10 minutes: - NEMo Diag (with two rechargeable batteries): 10 days - NEMo XT (with a non-rechargeable battery): with power supply only - With power supply: unlimited
Measurement interval	2.5 - 100 minutes(customisable) with the interval of 2.5 minutes (default: 10 min)
Conditions of use	Humidity : 20% to 80% (non-condensed). Temperature between 0°C and 40°C
Requirements / complementary	Requires: NEMo or NEMo XT Requirements for NEMo Logger: additional battery
Warranty	2 years excluding consumables

RELATED PRODUCTS	REFERENCE	QUANTITY
NEMo - Connected Indoor Air Quality Logger	NE-KIT440	1
NEMo XT - Indoor Air Quality Monitoring Station	NE-KIT430	1
Additional Battery for NENo Logger	NE-ALI020	1
Additional Card PM - Preventive Maintenance	NE-MAI040	1

NE-COP200

Particulate Matter (PM1/2.5/10)

With Temperature and Humidity Adapting System

The particulate matters (PM 1/2.5/4/10) sensor with temperature and humidity adapting system for NEMo or NEMo XT is an additional board allowing the measurement of fine particles and is pre-installed in factory. The sensor uses laser diffraction technology and measures every fraction independently.
This sensor features a temperature and humidity control system to adapt to changing environmental conditions.

Applications

- Diagnosing / Monitoring indoor and outdoor particulate matter pollution
- Evaluating the impact of outdoor pollution on indoor air quality
- Evaluating the impact of combustion sources (candles, heaters...)
- Helping improve the efficiency of filtration system

Advantages

- Accurate and reliable sensor, selected after Ethera's research on most sensors available on the market
- Easy to use, as the measurement is automatically included in the existing campaign
- Able to adapt to changing environmental conditions thanks to a temperature and humidity control system
- Highly robust with long lifetime

FINE PARTICLE	
Detection method	Laser-based light scattering with two angles of detection
Sampling method	Active with temperature and humidity adapting system
Measuring range	0 - 1000 µg/m³
Resolution	1 µg/m³
Accuracy	± 5 % of reading value
Particle detection range	0.3 µm - 10 µm
Sensor lifetime	Up to 10 years without maintenance under typical conditions of use (schools, offices...)
GENERAL SPECIFICATIONS	
Approx. dimensions / weight / position	External module to be installed on NEMo. Internal module for NEMo Outdoor. Dilmension & weight for the entire device: 290mm x 100mm x 80mm / 650 grams.
Power supply Impact on NEMo's autonomy	For a device equipped with this optional card only; device in campaign mode with a measurement interval of 10 minutes: - NEMo Diag (with two rechargeable batteries): 10 days - NEMo XT (with a non-rechargeable battery): with power supply only - With power supply: unlimited
Measurement interval	2.5 - 100 minutes(customisable) with the interval of 2.5 minutes (default: 10 min)
Conditions of use	Humidity : 0% to 95% (non-condensed). Temperature between -20°C and 70°C
Requirements / complementary	Requires: NEMo or NEMo XT or NEMo Outdoor Requirements for NEMo logger or Outdoor: additional battery
Warranty	2 years excluding consumables

RELATED PRODUCTS	REFERENCE	QUANTITY
NEMo - Connected Indoor Air Quality Logger	NE-KIT440	1
NEMo XT - Indoor Air Quality Monitoring Station	NE-KIT430	1
NEMo Outdoor - Outdoor Air Quality Monitoring Station	NE-KIT600	1
Additional Card PM - Preventive Maintenance	NE-MAI040	1

NE-COP040

VOC with PID Technology

The TVOC sensor using PID technology for NEMo or NEMo XT is an additional board allowing the measurement of Total Volatile Organic Compounds and is pre-installed in factory, with an ionization potential of less than 10.6eV. VOC measurement is carried out by photoionization.

Applications

- Diagnosing / Monitoring TVOC pollution (Aldehyde, BTEX including Benzene, NH_3, H_2S, hydrocarbure)
- Measuring overall indoor air pollution
- Assessing working environment near production sites and in the offices
- Air filtration system efficiency checking

Advantages

- Measurements at ppb level with comparison to guide values and occupational exposure-realted regulations
- Validating the absence of pollution for controlled environments
- Built-in gas library to adapt to the measurements of the targeted pollutants
- Easy to use, as the measurement is automatically included in the existing campaign
- No extra spece needed
- Pre-calibrated at the factory before shipping (on isobutylene)

VOLATILE ORGANIC COMPOUNDS WITH IONIZATION POTENTIAL OF LESS THAN 10.6EV	
Detection method	Photo-ionisation (PID) with 10.6eV lamp
Sampling method	Passive diffusion
Measuring range	1 ppb - 50 ppm
Resolution	1 ppb
Accuracy	± 3% of reading value
Warm-up time	5 seconds
Response time	< 3 seconds
GENERAL SPECIFICATIONS	
Approx. dimensions / weight / position	80mm x 50mm x 22mm / 30 grams / internal installation in NEMo
Power supply Impact on NEMo's autonomy	For a device equipped with this optional card only; device in campaign mode with a measurement interval of 10 minutes: - NEMo Diag (with two rechargeable batteries): 8 days - NEMo XT (with a non-rechargeable battery): with power supply only - With power supply: unlimited
Measurement interval	2.5 - 100 minutes(customisable) with the interval of 2.5 minutes (default: 10 min)
Conditions of use	Humidity : 20% to 80% (non-condensed). Temperature between 0°C and 40°C
Requirements / complementary	Requires: NEMo or NEMo XT Requirements for NEMo logger: additional battery
Warranty	2 years excluding consumables

RELATED PRODUCTS	REFERENCE	QUANTITY
NEMo - Connected Indoor Air Quality Logger	NE-KIT440	1
NEMo XT - Indoor Air Quality Monitoring Station	NE-KIT430	1
Additional battery for NEMo Logger	NE-ALI020	1
Additional Card NEMo PID (VOC) - Preventive Maintenance	NE-MAI050	1
Additional Card NEMo PID (VOC) - Curative Maintenance Level 1	NE-MAI060	1
Additional Card NEMo PID (VOC) - Curative Maintenance Level 2	NE-MAI070	1

NE-COP030

Radon

The radon sensor for NEMo or NEMo XT is an additional module allowing the measurement of radon and is pre-installed in factory. The measurement is carried out thanks to a pulsed ionization chamber.

Applications

- Monitoring radon concentration in public buildings
- Evaluating radon-related riss in workplaces
- Monitoring radon concentration in residencies
- Managing ventilation systems

Advantages

- Continuous measurement of radon every 10 minutes allowing to identify pollution peaks (as opposed to conventional sensors measuring average value for one day)
- Radon module validated by German Accreditation Body DAkkS (No. D-K-15063-01-00)
- Previously reserved for analysers, the technology (pulsed ionisation chamber) now integrated in a portable device
- Easy to use, as the measurement is automatically included in the existing campaign

RADON	
Detection method	Pulsed ionization chamber
Sampling method	Passive diffusion
Measuring range	4 Bq/m³ - 3700 Bq/m³
Resolution	2 Bq/m³
Accuracy	± 10% 370 Bq/m³
Response time 90%	1 hour

Performances validated by:

DAkkS Deutsche Akkreditierungsstelle

GENERAL SPECIFICATIONS	
Approx. dimensions / weight / position	100 mm x 80 mm x 110 mm / 250 grams / external installation below NEMo logger
Power supply Impact on NEMo's autonomy	For a device equipped with this module only; device in campaign mode with a measurement interval of 10 minutes: - NEMo Diag (with two rechargeable batteries): 8 hours (power supply recommended) - With power supply: unlimited
Measurement interval	10 minutes (moving average from the previous 60 minutes)
Conditions of use	Humidity : 20% to 80% (non-condensed). Temperature between 10°C and 40°C
Requirements / complementary	Requires: NEMo Requirements for NEMo logger: additional battery
Warranty	2 years excluding consumables

RELATED PRODUCTS	REFERENCE	QUANTITY
NEMo - Connected Indoor Air Quality Logger	NE-KIT440	1
Additional battery for NEMo Logger	NE-ALI020	1

NE-COP060

Nitrogen dioxide (NO_2)

The nitrogen dioxide (NO_2) sensor for NEMo or NEMo XT is an additional board allowing the measurement of nitrogen dioxide and is pre-installed in factory. The measurement is carried out with an electrochemical sensor.

Applications

- Diagnosing / Monitoring nitrogen dioxide (NO_2) pollution
- Evaluating the impact of outdoor pollution and traffic on indoor air

Advantages

- Accurate and reliable sensor, selected after Ethera's global research on most sensors available on the market
- Easy to use, as the measurement is automatically included in the existing campaign
- Internal installation, no extra space needed
- Highly robust with long lifetime

NITROGEN DIOXIDE (NO_2)	
Detection method	Electrochemical
Sampling method	Passive diffusion
Measuring range	1 ppb - 17 ppm
Accuracy	± 15 ppb
Warm-up time	Around 1 hour
Response time	< 15 seconds
GENERAL SPECIFICATIONS	
Approx. dimensions / weight / position	80mm x 50mm x 30mm / 50 grams / internal installation in NEMo
Power supply Impact on NEMo's autonomy	For a device equipped with this optional card only; device in campaign mode with a measurement interval of 10 minutes: - NEMo Diag (with two rechargeable batteries): 25 days - NEMo XT (with a non-rechargeable battery): with power supply only - With power supply: unlimited
Measurement interval	2.5 - 100 minutes(customisable) with the interval of 2.5 minutes (default: 10 min)
Conditions of use	Humidity : 30% to 70% (non-condensed). Temperature between 10°C and 40°C
Requirements / complementary	Requires: NEMo or NEMo XT Requirements for NEMo logger: additional battery
Warranty	2 years excluding consumables

RELATED PRODUCTS	REFERENCE	QUANTITY
NEMo - Connected Indoor Air Quality Logger	NE-KIT440	1
NEMo XT - Indoor Air Quality Monitoring Station	NE-KIT430	1
Additional battery for NEMo Logger	NE-ALI020	1

NE-COP080

Nitrogen dioxide & Ozone (NO_2/O_3)

The nitrogen dioxide & ozone (NO_2/O_3) sensor for NEMo or NEMo XT is an additional board allowing the measurement of nitrogen dioxide and ozone and is pre-installed in factory. The measurement is carried out with an electrochemical sensor.

Applications

- Diagnosing / Monitoring nitrogen dioxide (NO_2) and ozone (O_3) pollution
- Evaluating the impact of outdoor pollution on indoor air
- Assessing the impact of indoor air pollution sources (photocopieurs...)

Advantages

- Accurate and reliable sensor, selected after Ethera's global research on most sensors available on the market
- Easy to use, as the measurement is automatically included in the existing campaign
- Internal installation, no extra space needed
- Highly robust with long lifetime

NITROGEN DIOXIDE (NO_2)	
Detection method	Electrochemical
Sampling method	Passive diffusion
Measuring range	1 ppb - 17 ppm
Accuracy	± 15 ppb
Warm-up time	Around 1 hour
Response time	< 15 seconds
OZONE (O_3)	
Detection method	Electrochemical
Sampling method	Passive diffusion
Measuring range	1 ppb - 7 600 ppb
Accuracy	± 15 ppb
Warm-up time	Around 1 hour
Response time	< 15 seconds
GENERAL SPECIFICATIONS	
Approx. dimensions / weight / position	80mm x 50mm x 30mm / 50 grams / internal installation in NEMo
Power supply Impact on NEMo's autonomy	For a device equipped with this optional card only; device in campaign mode with a measurement interval of 10 minutes: - NEMo Diag (with two rechargeable batteries): 25 days - NEMo XT (with a non-rechargeable battery): with power supply only - With power supply: unlimited
Measurement interval	2.5 - 100 minutes(customisable) with the interval of 2.5 minutes (default: 10 min)
Conditions of use	Humidity : 30% to 70% (non-condensed). Temperature between 10°C and 40°C
Requirements / complementary	Requires: NEMo or NEMo XT Requirements for NEMo logger: additional battery
Warranty	2 years excluding consumables

RELATED PRODUCTS	REFERENCE	QUANTITY
NEMo - Connected Indoor Air Quality Logger	NE-KIT440	1
NEMo XT - Indoor Air Quality Monitoring Station	NE-KIT430	1
Additional battery for NEMo Logger	NE-ALI020	1

NE-COP090

Hydrogen sulfide (H_2S)

The hydrogen sulfide (H_2S) sensor for NEMo or NEMo XT is an additional board allowing the measurement of hydrogen sulfide and is pre-installed in factory. The measurement is carried out with an electrochemical sensor.

Applications

- Diagnosing / Monitoring hydrogen sulfide (H_2S) pollution
- Managing problems related to bad odour
- Evaluating the impact of certain industries (refineries, water treatment factory...) on neighbourhood

Advantages

- Accurate and reliable sensor, selected after Ethera's global research on most sensors available on the market
- Easy to use, as the measurement is automatically included in the existing campaign
- Internal installation, no extra space needed
- Highly robust with long lifetime

HYDROGEN SULFIDE (H_2S)	
Detection method	Electrochemical
Sampling method	Passive diffusion
Measuring range	1 ppb - 2 200 ppb
Accuracy	± 1 ppb
Warm-up time	Around 1 hour
Response time	< 15 seconds
GENERAL SPECIFICATIONS	
Approx. dimensions / weight / position	80mm x 50mm x 30mm / 50 grams / internal installation in NEMo
Power supply Impact on NEMo's autonomy	For a device equipped with this optional card only; device in campaign mode with a measurement interval of 10 minutes: - NEMo Diag (with two rechargeable batteries): 25 days - NEMo XT (with a non-rechargeable battery): with power supply only - With power supply: unlimited
Measurement interval	2.5 - 100 minutes(customisable) with the interval of 2.5 minutes (default: 10 min)
Conditions of use	Humidity : 30% to 70% (non-condensed). Temperature between 10°C and 40°C
Requirements / complementary	Requires: NEMo or NEMo XT Requirements for NEMo logger: additional battery
Warranty	2 years excluding consumables

RELATED PRODUCTS	REFERENCE	QUANTITY
NEMo - Connected Indoor Air Quality Logger	NE-KIT440	1
NEMo XT - Indoor Air Quality Monitoring Station	NE-KIT430	1
Additional battery for NEMo Logger	NE-ALI020	1

NE-COP100

Carbon monoxide (CO)

The carbon monoxide (CO) sensor for NEMo or NEMo XT is an additional board allowing the measurement of carbon monoxide and is pre-installed in factory. The measurement is carried out with an electrochemical sensor.

Applications

- Diagnosing / Monitoring carbon monoxide (CO) pollution
- Evaluating the impact of outdoor pollution on indoor air
- Detecting sources of pollution from incomplete combustion (heaters, pollution from parking lots, etc.)

Advantages

- Accurate and reliable sensor, selected after Ethera's global research on most sensors available on the market
- Easy to use, as the measurement is automatically included in the existing campaign
- Internal installation, no extra space needed
- Highly robust with long lifetime

CARBON MONOXIDE (CO)	
Detection method	Electrochemical
Sampling method	Passive diffusion
Measuring range	1 ppb - 6 800 ppb
Accuracy	± 5 ppb
Warm-up time	Around 1 hour
Response time	< 15 seconds
GENERAL SPECIFICATIONS	
Approx. dimensions / weight / position	80mm x 50mm x 30mm / 50 grams / internal installation in NEMo
Power supply Impact on NEMo's autonomy	For a device equipped with this optional card only; device in campaign mode with a measurement interval of 10 minutes: - NEMo Diag (with two rechargeable batteries): 25 days - NEMo XT (with a non-rechargeable battery): with power supply only - With power supply: unlimited
Measurement interval	2.5 - 100 minutes(customisable) with the interval of 2.5 minutes (default: 10 min)
Conditions of use	Humidity : 30% to 70% (non-condensed). Temperature between 10°C and 40°C
Requirements / complementary	Requires: NEMo or NEMo XT Requirements for NEMo logger: additional battery
Warranty	2 years excluding consumables

RELATED PRODUCTS	REFERENCE	QUANTITY
NEMo - Connected Indoor Air Quality Logger	NE-KIT440	1
NEMo XT - Indoor Air Quality Monitoring Station	NE-KIT430	1
Additional battery for NEMo Logger	NE-ALI020	1

NE-COP110

Nitrogen monoxide (NO)

The nitrogen monoxide (NO) sensor for NEMo or NEMo XT is an additional board allowing the measurement of nitrogen monoxide and is pre-installed in factory. The measurement is carried out with an electrochemical sensor.

Applications

- Diagnosing / Monitoring nitrogen monoxide (NO) pollution
- Evaluating the impact of outdoor pollution and traffic on indoor air

Advantages

- Accurate and reliable sensor, selected after Ethera's global research on most sensors available on the market
- Easy to use, as the measurement is automatically included in the existing campaign
- Internal installation, no extra space needed
- Highly robust with long lifetime

NITROGEN MONOXIDE (NO)	
Detection method	Electrochemical
Sampling method	Passive diffusion
Measuring range	1 ppb - 10 ppm
Accuracy	± 15 ppb
Warm-up time	Around 1 hour
Response time	< 15 seconds
GENERAL SPECIFICATIONS	
Approx. dimensions / weight / position	80mm x 50mm x 30mm / 50 grams / internal installation in NEMo
Power supply Impact on NEMo's autonomy	For a device equipped with this optional card only; device in campaign mode with a measurement interval of 10 minutes: - NEMo Diag (with two rechargeable batteries): 25 days - NEMo XT (with a non-rechargeable battery): with power supply only - With power supply: unlimited
Measurement interval	2.5 - 100 minutes(customisable) with the interval of 2.5 minutes (default: 10 min)
Conditions of use	Humidity : 30% to 70% (non-condensed). Temperature between 10°C and 40°C
Requirements / complementary	Requires: NEMo or NEMo XT Requirements for NEMo logger: additional battery
Warranty	2 years excluding consumables

RELATED PRODUCTS	REFERENCE	QUANTITY
NEMo - Connected Indoor Air Quality Logger	NE-KIT440	1
NEMo XT - Indoor Air Quality Monitoring Station	NE-KIT430	1
Additional battery for NEMo Logger	NE-ALI020	1

NE-COP120

Ammonia (NH_3)

The ammonia (NH_3) sensor for NEMo or NEMo XT is an additional board allowing the measurement of ammonia and is pre-installed in factory. The measurement is carried out with an electrochemical sensor.

Applications

- Diagnosing / Monitoring ammonia (NH_3) pollution
- Evaluating the impact of outdoor pollution on indoor air
- Evaluating the impact of agriculture industry and cleaning products on indoor air

Advantages

- Accurate and reliable sensor, selected after Ethera's global research on most sensors available on the market
- Easy to use, as the measurement is automatically included in the existing campaign
- Internal installation, no extra space needed
- Highly robust with long lifetime

AMMONIA (NH_3)	
Detection method	Electrochemical
Sampling method	Passive diffusion
Measuring range	1 ppm - 87 ppm
Accuracy	± 300 ppb
Warm-up time	Around 1 hour
Response time	< 15 seconds
GENERAL SPECIFICATIONS	
Approx. dimensions / weight / position	80mm x 50mm x 30mm / 50 grams / internal installation in NEMo
Power supply Impact on NEMo's autonomy	For a device equipped with this optional card only; device in campaign mode with a measurement interval of 10 minutes: - NEMo Diag (with two rechargeable batteries): 25 days - NEMo XT (with a non-rechargeable battery): with power supply only - With power supply: unlimited
Measurement interval	2.5 - 100 minutes(customisable) with the interval of 2.5 minutes (default: 10 min)
Conditions of use	Humidity : 30% to 70% (non-condensed). Temperature between 10°C and 40°C
Requirements / complementary	Requires: NEMo or NEMo XT Requirements for NEMo logger: additional battery
Warranty	2 years excluding consumables

RELATED PRODUCTS	REFERENCE	QUANTITY
NEMo - Connected Indoor Air Quality Logger	NE-KIT440	1
NEMo XT - Indoor Air Quality Monitoring Station	NE-KIT430	1
Additional battery for NEMo Logger	NE-ALI020	1

NE-COP150

Sulfur dioxide (SO_2)

The sulfur dioxide (SO_2) sensor for NEMo or NEMo XT is an additional board allowing the measurement of sulfur dioxide and is pre-installed in factory. The measurement is carried out with an electrochemical sensor.

Applications

- Diagnosing / Monitoring sulfur dioxide (SO_2) pollution
- Evaluating the impact of outdoor pollution and traffic on indoor air
- Evaluating the impact of certain industries (coal-fired power plants) on neighbourhood

Advantages

- Accurate and reliable sensor, selected after Ethera's global research on most sensors available on the market
- Easy to use, as the measurement is automatically included in the existing campaign
- Internal installation, no extra space needed
- Highly robust with long lifetime

SULFUR DIOXIDE (SO_2)	
Detection method	Electrochemical
Sampling method	Passive diffusion
Measuring range	1 ppm - 9 000 ppb
Accuracy	± 5 ppb
Warm-up time	Around 1 hour
Response time	< 15 seconds
GENERAL SPECIFICATIONS	
Approx. dimensions / weight / position	80mm x 50mm x 30mm / 50 grams / internal installation in NEMo
Power supply Impact on NEMo's autonomy	For a device equipped with this optional card only; device in campaign mode with a measurement interval of 10 minutes: - NEMo Diag (with two rechargeable batteries): 25 days - NEMo XT (with a non-rechargeable battery): with power supply only - With power supply: unlimited
Measurement interval	2.5 - 100 minutes(customisable) with the interval of 2.5 minutes (default: 10 min)
Conditions of use	Humidity : 30% to 70% (non-condensed). Temperature between 10°C and 40°C
Requirements / complementary	Requires: NEMo or NEMo XT Requirements for NEMo logger: additional battery
Warranty	2 years excluding consumables

RELATED PRODUCTS	REFERENCE	QUANTITY
NEMo - Connected Indoor Air Quality Logger	NE-KIT440	1
NEMo XT - Indoor Air Quality Monitoring Station	NE-KIT430	1
Additional battery for NEMo Logger	NE-ALI020	1

NE-COP310

Weather module (WS - WD)

The additional weather module for NEMo Outdoor allows the measurement of wind velocity and direction, and is pre-installed in factory. The measurement is carried out using an ultrasonic anemometer.

Applications

- Measuring meteorological parameters in addition to atmospheric pollution
- Evaluating the impact of environmental parameters on outdoor pollution

Advantages

- Accurate and reliable sensor, selected after Ethera's global research on most sensors available on the market
- Easy to use, as the measurement is automatically included in the existing campaign
- Highly robust with long lifetime

WIND VELOCITY	
Detection method	Ultrasonic anemometer
Measuring range	0 - 40 m/s
Accuracy	5 %
Resolution	0.1 m/s
WIND DIRECTION	
Detection method	Ultrasonic anemometer
Measuring range	0 - 359°
Accuracy	3°
Resolution	1°
GENERAL SPECIFICATIONS	
Approx. dimensions / weight / position	External module for NEMo Outdoor. Module: 84mm x 84mm x 120mm / 380 grams
Power supply	Integrated; use battery / power cable / solar panel of the device (affect its autonomy)
Measurement interval	2.5 - 100 minutes(customisable) with the interval of 2.5 minutes (default: 10 min)
Conditions of use	Temperature: -40°C to 60°C
Requirements / complementary	Requires: NEMo Outdoor Requirements for NEMo Outdoor: additional battery
Warranty	1 year

RELATED PRODUCTS	REFERENCE	QUANTITY
NEMo - Connected Indoor Air Quality Logger	NE-KIT440	1
NEMo Outdoor - Outdoor Air Quality Monitoring Station	NE-KIT600	1
Additional battery for NEMo Logger	NE-ALI020	1

NE-COP290

Noise & Light

The additional sensor for NEMo or NEMo XT allows the measurement of noise & light and is pre-installed in factory.

Applications

- Diagnosing / Monitoring noise and light level
- Monitoring comfort-related parameters for a better understanding of indoor environment quality
- Detecting in real time the environement along with the CO_2 sensor

LIGHT*	
Detection method	Photo resistor
Measuring range	0 - 3 000 lux
Accuracy	1 lux
Resolution	< 30 s
NOISE*	
Detection method	MEMS
Measuring range	40 - 120 dB SPL
Accuracy	1 dB
Resolution	< 10 s

*Technical details in the process of validation. Available: February 2020

NE-COP160

Modbus

The additional card for NEMo XT allows data transfer via Modbus protocol (RS485), and is pre-installed in factory.

Applications

- Sending measurement results from NEMo XT to Building Management System (BMS)
- Optimising ventilation system
- Collecting data from NEMo XT via wired channel

NE-DIS010

Screen 4.3'' type HMI (Modbus)

Operating via Modbus, the 4.3'' screen allows the local display of measurements by one NEMo XT.

Applications

- Displaying in real-time air quality inside buildings.
- Sending alerts to occupants in case of pollution peaks, allowing prompt implementation of local solution (aeration, purification...).
- Accelerating the implementation of good practices thanks to customisable information.

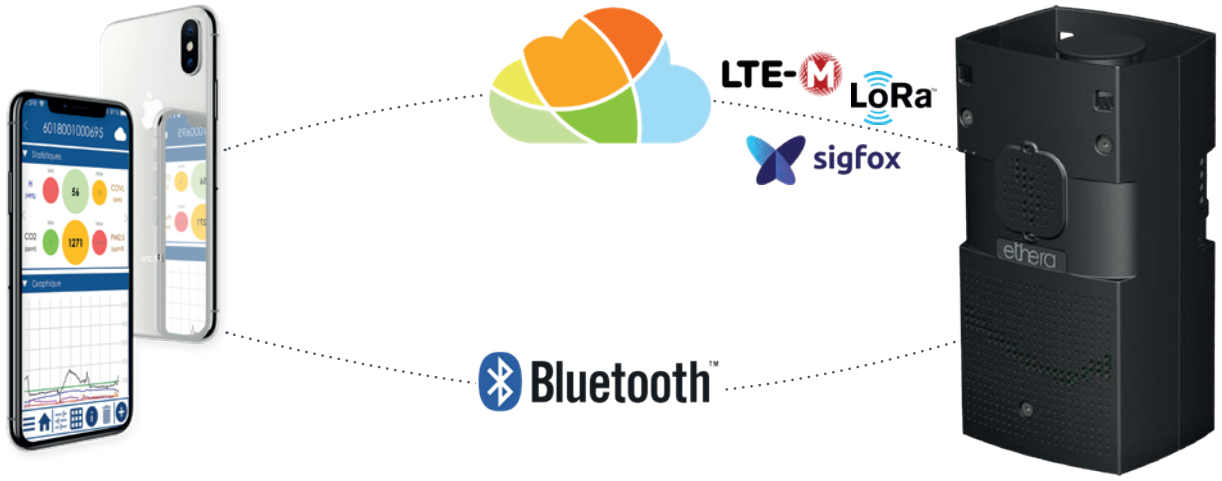
NEMo View

FREE

Mobile application for real-time data access

Advantages

- Easy to view data from Cloud in real time wherever you are
- Use your smartphone as screen for NEMo or NEMo XT
- Make sure your NEMo and NEMo XT have been properly installed before leaving the building
- Download the data from internal memory of your NEMo (bluetooth) or from your formaldehyde cartridge (with RFID) directly to your phone



NEMo Cloud

Dedicated web interface for IAQ monitoring

Advantages

- Intuitive and user-friendly interface for real-time IAQ monitoring
- Possible to set up personalised alerts
- Access to archived data
- External output via webservice to control ventilation systems

FAP-FOR

Feel’air - formaldehyde test

Indoor Air Quality (IAQ) Indicator – formaldehyde

Feel’air is a simple and intuitive tool to measure one of the major pollutants in indoor air – formaldehyde.

All you have to do is to have the Feel’air card exposed for 24 hours, use the associated mobile application (IOS / Android) to take a picture of the card in order to estimate formaldehyde concentration.

The result will then be compared to health-related guide values for immediate understanding.

Simple and efficient tool for the awareness-raising campaign of Indoor Air Quality

Applications

- Awareness-raising: carry out awareness campaigns for general public regarding Indoor Air Quality
- Giving recommendation: use Feel’air to demonstrate the efficiency of your solutions (ventilation, air purifier, non-emissive materials…)
- Increasing user loyalty: stay in touch with your users thanks to the Feel’air application

Advantages

- Ethera’s patented, exclusive technology allowing formaldehyde measurement from a smartphone
- Indicators compatible with Indoor Air Guide Values
- User-friendly mobile application to understand better the results with IAQ improving advice
- Possible to customise the test card and the Feel’air application to your brand image

What is formaldehyde?

Formaldehyde is one of the major pollutants in indoor air. It is classified as carcinogenic 1B, and its volatility makes it faster to spread in the building. It is used in most manufactured goods used in the building construction or in decorations. It is therefore omnipresent in indoor environments, where we spend more than 80% of our time and can cause, in the long term, serious health problems, such as irritation and asthma.

Why measure formaldehyde in particular?

Formaldehyde is notorious for being present in most buildings and in most sources of indoor pollution (building materials, furniture, human activities, etc.). A high concentration can be seen as the result of a failed or incomplete ventilation system, which no longer manages to expel the pollutants to outdoor. It is therefore the ideal indicator of indoor air quality. There are very good reasons that it was chosen to help identify sources of indoor pollution in the regulations where IAQ monitoring are required for public buildings (nurseries, schools…).

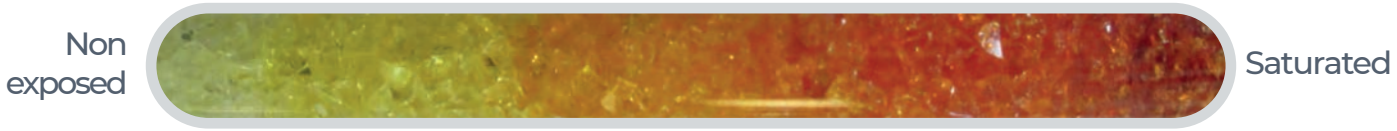
PT-FOR0XX

PureTECH®

Innovative filtering media with visual saturation level indicator

The PureTECH® granular media is an innovative filtering media with unique trapping capacities. The material has a specific surface area similar to active carbon. The impregnation “in the mass” of its pores allows to trap pollutants over time in an irreversible way without any release.

In addition, this feature allows the material to change colour as it becomes laden with pollutants. It thus intrinsically has a visible indicator of saturation level, allowing to optimise the maintenance cycles of the filters.



PureTECH® is the ideal air purification material that can be used alone or coupled with other indoor air pollution control solutions (adsorbent cartridges, photocatalysts...). It can be applied for purifying indoor air in public buildings, laboratories or industry. PureTECH® is one of the only filtering media on the market with proven capacity to trap formaldehyde.

Applications

- Indoor air purification
- Pollutants trapping

Advantages

- Built-in saturation level indicator
- Trapping pollutants without releasing
- Consistently efficient throughout the life cycle

ethera

Innovation in the air

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