Air & Water
analyzers

hemera
analyzers

Contents

+ Features
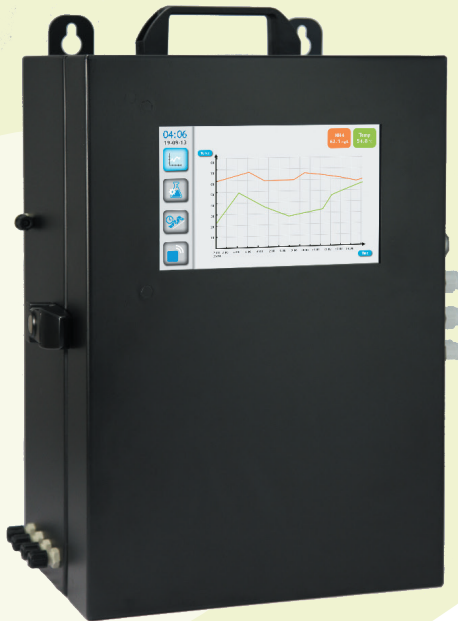
WIN THE INNOVATION PRIZE IN EUROPE

With more than 18 years of professional experience in the analyser industry, our engineers have developed a wide range of advanced solutions and services to help monitoring the quality of water and air

BEST TECHNOLOGY IN UV-SPECTROSCOPY

- High degree of stability, selectivity and sensitivity
- No second pollution
- Up to eight components measured simultaneously
- Uses FTLS mathematical (Resolution, sensitivity, stability, and reliability superior to dispersive or filter NDUV analyzers)
- Non-contact with sample
- Upgrade - parameters: nitrate, color by changing software (not changing hardware)

FRIENDLY DESIGNE

- No moving parts in the detector module (Each channel can be optimized for sensitivity, one spectral range and stability)
- Superior design and manufacturing methods make it faster and easier to use
- Compact simple design, less than 14 KG

ECONOMY

- Customizable detector module: different detector for each different channel (Repeatability, reproducibility, stability, low maintenance analytical method transferability.)
- UV-radiation source with extremely long life span, and not heated

EASY TO USE

- Friendly screen, easy to handle
- USB collects Data
- <10s respond time
- Easy installation
- Various applications
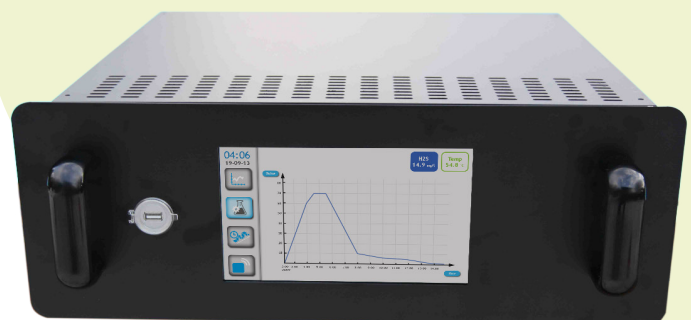
Water Applications

Environnement

WASTE WATER

Waste water treatment plant, Industry

NO_3^- NO_2^- NH_4^+ COD   pH   TSS PO_4^{3-} Colour

DRINKING WATER

Potabilization plants

NO_3^- Colour   Chlorine   Turbidity   pH

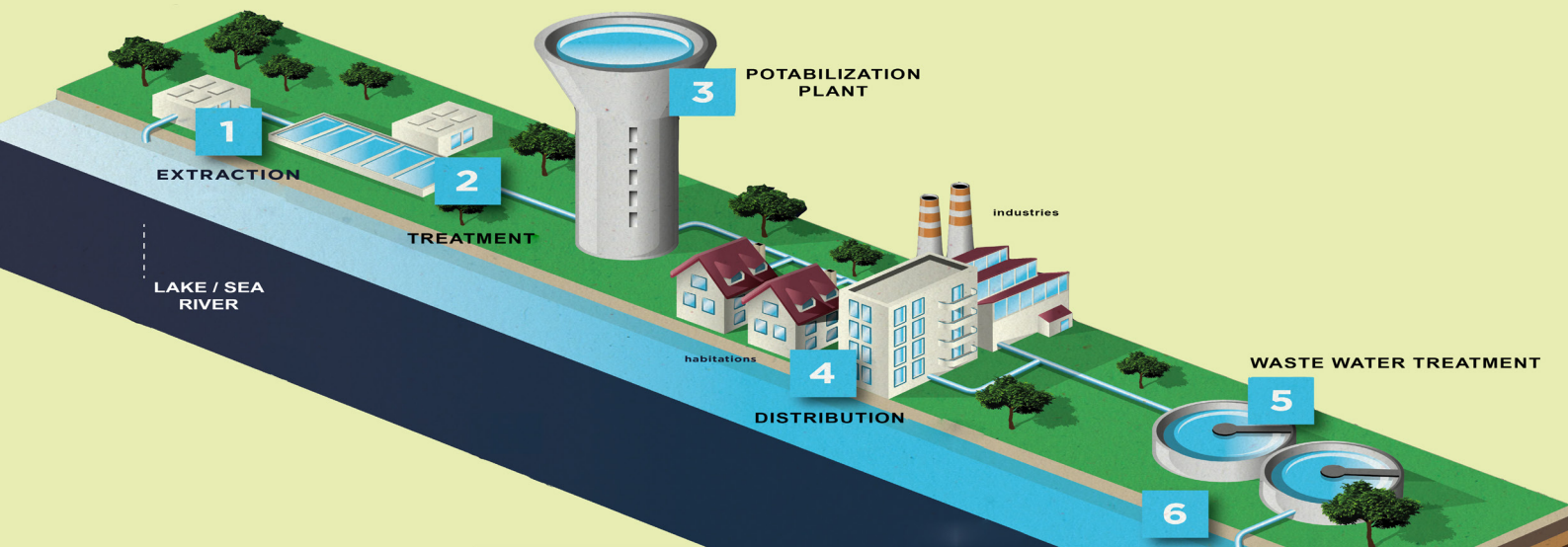## SURFACE WATER

River, Lake, Rainfall water

NO_3^- PO_4^{3-} Hydrocarbon   COD   Salinity   DO   pH NH_4^+

SEA WATER

Desalination plant, Harbour

S^{2-} Hydrocarbon NH_4^+ NO_2^-

1 EXTRACTION

LAKE / SEA RIVER

2 TREATMENT

3 POTABILIZATION PLANT

industries

habitations

4 DISTRIBUTION

WASTE WATER TREATMENT

5

6

Air Applications

Environnement

EMISSION

Industry, power plant, waste incinerator

SO_2 NH_3 NO NO_2 Cl_2

AMBIENT AIR

City, waste water treatment plant, industry

H_2S SO_2 NO_x O_3

BIOGAS

Biogas plant, waste water treatment plant

H_2S NH_3 Mercaptan

ENGINE GAS

Motor bench, embedded system on vehicle

NH_3 NO_x SO_2 H_2S

CEMS
Émissions

AQMS
Air quality

MOTOR BENCH

Naïade
Measurement performances

Components	Range	Accuracy	Repeatability	Detection limit
NH_4^+ Ammonium	0 - 10 mg/L	0,1 mg/L	0,1 mg/L	0,1 mg/L
NO_3^- Nitrates	0 - 100 mg/L	0,1 mg/L	0,1 mg/L	0,1 mg/L
NO_2^- Nitrites	0 - 10 mg/L	0,1 mg/L	0,1 mg/L	0,1 mg/L
PO_4^{3-} Phosphates	0 - 10 mg/L	0,1 mg/L	0,1 mg/L	0,1 mg/L
COD eq./BOD eq. Organic Matter	0 - 1000 mg/L	±3-5 %	±0,1 mg/L	±1 mg/L
COD eq. H Organic Matter H	0 - 10000 mg/L	±5-10 %	±10 mg/L	±10 mg/L
S_2^- Sulphides	0 - 10 mg/L	0,1 mg/L	0,1 mg/L	0,1 mg/L
TSS TSS	0 - 1000 mg/L	±3-5 %	±0,1 mg/L	±1 mg/L
Turbidity Turbidity	0 - 100 NTU	±2 NTU	±2 NTU	±2 NTU
Turbidity H Turbidity H	0 - 4000 NTU	±5 NTU	±5 NTU	±1 NTU
Pt/Co Colcour	0 - 5000 Pt-Co	±5-10 Pt-Co	±1 Pt-Co	±1 Pt-Co
Cl_2 Chlorine	0 - 10 mg/L	0,01 mg/L	0,01 mg/L	0,05 mg/L
Algea Chlorophyll A	0 - 100 µg/L	0,1 µg/L	0,1 µg/L	0,1 µg/L
HC Hydrocarbons	0 - 10 mg/L	0,1 mg/L	0,1 mg/L	0,1 mg/L
O_2 Dissolved Oxygen	0 - 20 mg/L	0,01 mg/L	0,01 mg/L	0,05 mg/L
EC Conductivity	0 - 500 µS/cm	1 µS	1 µS	10 µS
Acid/Base pH	0 - 14 pH	0,01 pH	0,01 pH	0,1 pH
O_3 Ozone	0 - 10 mg/L	0,1 mg/L	0,1 mg/L	0,1 mg/L
ORP ORP	-1500 - 1500 mV	0,1 mV	0,1 mV	0,1 mV

Environment

Aether
Measurement
performances

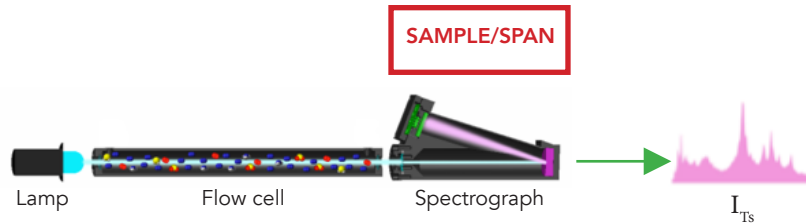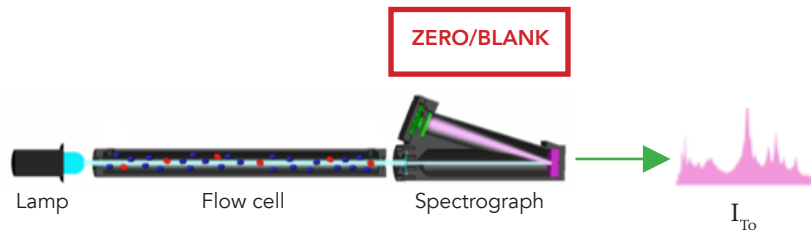| Components	Range	Accuracy	Repeatability	Detection limit
SO_2 Sulphur Dioxide	0 - 10 mg/m³	0,2 mg/m³	0,2 mg/m³	0,2 mg/m³
NO Nitric Oxide	0 - 10 mg/m³	0,5 mg/m³	0,5 mg/m³	0,5 mg/m³
NO_2 Nitrogen Dioxide	0 - 10 mg/m³	1 mg/m³	1 mg/m³	1 mg/m³
NH_3 Ammonia	0 - 10 mg/m³	0,1 mg/m³	0,1 mg/m³	0,1 mg/m³
HCHO Formaldehyde	0 - 10 mg/m³	0,2 mg/m³	0,2 mg/m³	0,2 mg/m³
C_6H_6 Benzene	0 - 10 mg/m³	0,1 mg/m³	0,1 mg/m³	0,1 mg/m³
C_7H_8 Toluene	0 - 10 mg/m³	0,1 mg/m³	0,1 mg/m³	0,1 mg/m³
C_8H_{10} Xylene	0 - 10 mg/m³	0,1 mg/m³	0,1 mg/m³	0,1 mg/m³
O_3 Ozone	0 - 10 mg/m³	0,01 mg/m³	0,01 mg/m³	0,01 mg/m³
C_2H_4O Acetaldehyde	0 - 1000 mg/m³	0,2 mg/m³	0,2 mg/m³	0,2 mg/m³

Environment

Ranges indicated above are standard ranges. Aether and Naïade offer the possibility to measure lower and higher ranges on demand.

All sensors enclosure with IP68 and standard cable 10 meters and automatic cleaning by air compressed/ acid 5%.

Measurement Principle

Measuring principle is based on UV absorption spectroscopy according to Beer-Lambert's law.

ZERO/BLANK

Lamp · Flow cell · Spectrograph · I_{To}

SAMPLE/SPAN

Lamp · Flow cell · Spectrograph · I_{Ts}

Absorbance spectrum calculation is the difference between incident light (IT0) on ZERO (or BLANK) and transmitted light (ITS) on SAMPLE (or SPAN). Absorbance is defined as follows:

$$A = \log \frac{I_{T0}}{I_{TS}}$$

Molecule concentrations (c) are linear to absorbance spectrum (A) and optical path length (l) of the flow cell. Absorption coefficient (ε) is defined as follows:

$$\varepsilon = \frac{A}{l.c}$$

Sample absorption spectrum is treated using a Fourier Transform Least Square mathematical treatment (FTLS) in order to extract the spectrum corresponding to each element to be monitored.
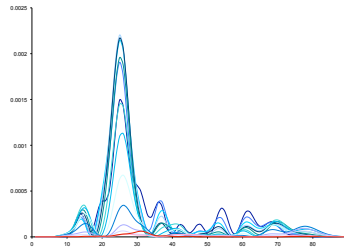
Technical Data

Analysis:
- Range: 0 - 1ppm to 0 - 10%
- Zero drift: <2% / week
- Span drift: <0.5% / week
- Accuracy: <2% FS
- Repeatability: <2% FS
- Detection limit: 2% FS
- Response time: 1 to 10 sec
- Flow influence: <0.5% FS
- Pressure influence: <0.01% / hPa
- Temperature influence: <0.01% / T°C
- Warm up time: <1 hour
- Automatic cleaning: by acid or air compressed.
- Cycle measurement : continuous or periodic, reponse time less than 1 minute

Sample:
- Temperature: 1 - 60 °C
- Pressure: <1500 hPa abs.
- Flow: 0.5 - 5 L/min
- Volume: < 100 mL

430 mm · 300 mm · 210 mm

431,5 mm · 431 mm · 176 mm (4U) · 482.6 mm (19")

Monitor:
- Display: 8.5'' TFT color touch screen Type: glass to glass
- Data storage: 16 GB
- Operating temperature: 0 - 50 °C

Outputs:
- Analog: 4 - 20 mA
- Alarm: default relay
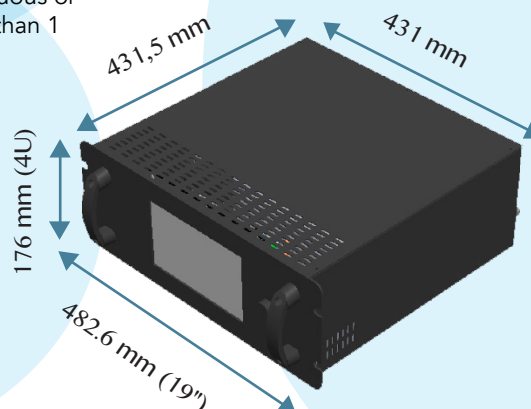- Interface: RS485 (modbus)

Enclosure:
- Dimensions : 430*300*210mm
  ou
  19'' *4U*400mm
- Weight: < 14 kg
- Material: SS304 (SS 316 in option)
- Protection rate: IP54 (IP65 in option)
- Area classification: (ATEX zone 1 or 2 in option)

Power:
- Supply: 100 - 240 VAC or 24 VDC
- Consumption: 40 W max

Certifications:
- Approvals: ICE 61010-1 / ICE 61326

Services

The 18 years of expertise in the instrumentation field that our engineers have and the multiples partnership that we build, allow us to have a very good visibility of our clients issues. Thus, we are able to offer a detailed analysis of their situation and a fitted and customized solution. We offer a real follow-up and a quality after-sales service by experts in that field.

Following this spirit of excellence, we give value to respect the European rules and the high quality of our relations with our different partners.

ADVISING

We are able to perform an in-depth analysis of your requirement and your situation in order to offer you an adapted and customised situation.

COMMISIONING

The Hemera team can assist you for your on-site solution installation and commissiong.

OPERATOR TRAINING

We can deliver quality training in order to ensure that operators are able to use our instruments in good conditions.

MAINTENANCE

The Hemera team will follow you in the use of your equipment for its whole lifetime.

Notes

water

Notes

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air

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