

Phytronix

Environmental Automated Analysis
Products Portfolio

Our Co-Developer and
Distributor

ingenio
by Phytronix

www.phytronix.com



Harnessing the Power of Automation for our Environment

Industries' constant evolution requires sensitive analytical instruments to detect trace-level contaminants in our soil, water, plants, and food sources. Whether the analysis process is based on GC or LC, human power is still integral to the preparation of every sample, even today. While these technologies assist in preserving our environment, the methods employed can be time-consuming for lab technicians. Sophisticated tools and techniques are now available to automate these processes. Join Phytronix and Ingenio on this automation journey and see how these instruments *will blow your mind.*

boreas

Automated GC sample prep of compressed gas

SF₆ purity determination is a constant need in the power industry. Its arc quenching capabilities make it an ideal insulator in many electric utilities. Although this gas is crucial for these applications, SF₆ is unfortunately a powerful greenhouse gas with a global warming potential of 23 900.

To safely perform SF₆ emission-free analysis on a robotic platform, Boreas was designed to execute an automated autosampling of compressed gas cylinders used in electric transformers. The gas sample is then transferred to a gas chromatograph to be quantified in a timely manner. This automated system can also be used for other types of gas analysis, such as SO₂, H₂S, HF, permanent gases and RG.



Features

- Pressure controlled injection for better reproducibility
- Complete purge between each sample to minimize carryover
- Online filter to prevent clogging
- Automatic cylinder alignment verification before each run
- Pressure log of each cylinder.
- Customizable sample injection volume and pressure
- Customizable carousel to accommodate different cylinders (initial setup for Restek #24133 cylinders)
- Designed to be interfaced with existing GC, GC-MS, GC-MS/MS
- Easily integrated in existing CDS such as Xcalibur™, ChemStation, MassHunter, MassLynx™ etc.
- Fully controlled via Chronos

Electrical/Gas Specifications

- 120 V~, 60 Hz, 2 A
- RSI: 100-240 V~, 50-60 Hz, 3 A, 200 W (max)
- Compressed air supply: 60 - 100 psi

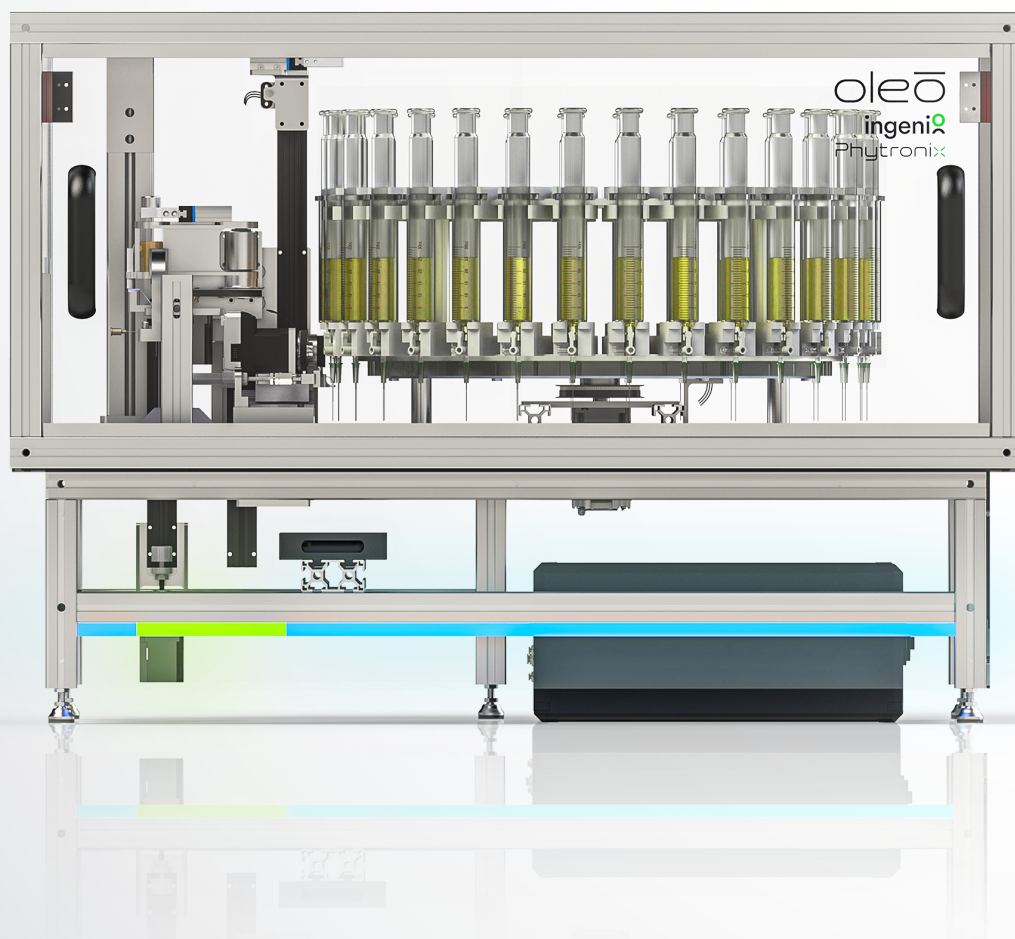


oleo

Automated GC sample prep of dissolved gas-in-oil

Dissolved gas-in-oil analysis is performed on oil used as an insulator in electrical apparatus. Due to arcing and other reactions, different gases can form, and can thus impair the insulating property of the oil. Critical failure of a transformer may result in up to 20 000 gallons of spilled oil in the environment, and can also cause fires which must be contained and smothered quickly.

The total volume of combustible gases and the rate of their generation may predict the severity of the impending failure of a transformer. Since insulation oil must be tested at least once every 3 years, and more frequently when an incipient fault is detected, a robotic platform was designed to automate this process. In combination with a PAL RTC and a GC-MS system, Oleo allows the automated analysis of 30 samples of oil by headspace, to quantify permanent gases, methane, ethane, ethylene, etc.



Features

- 30 glass syringe carousel
- Helium gas vial purging system
- Adjustable purging time and pressure
- Customizable sample transfer volume
- Adjustable injection volume
- Gas purged injection needle
- Heated injection syringe from 40 to 450°C
- 6-position Agitator
- Agitator temperature range from 30 to 200°C
- Agitation speed 250 to 750 rpm
- Led status bar
- Designed to be interfaced with existing GC, GC-MS, GC-MS/MS
- Easily integrated in existing CDS such as Xcalibur™, ChemStation, MassHunter, MassLynx™ etc.
- Fully controlled via Chronos

Electrical/Gas Specifications

- 120 V~, 60 Hz, 1 A
- RSI: 100-240 V~, 50-60 Hz, 3 A, 200 W (max)
- **Compressed air supply:** 20 - 100 psi
- **Helium supply:** 20 - 110 psi



HAPEX

Automated GC sample prep of contaminants in soil

Polycyclic Aromatic Hydrocarbons (PAHs) are contaminants that can be found in soil after an incomplete combustion of organic materials, such as forest fires. Once these are in soil, they can be carried into surface or ground water and thus pollute crops via root adsorption.

The quantification of these is a crucial component to protect our environment and human health. To accomplish this goal, an automated process was designed. HAPEX combines an embedded centrifuge and 3 vortex mixers with a PAL RTC system, to greatly reduce the time needed to go through the soil sample preparation.

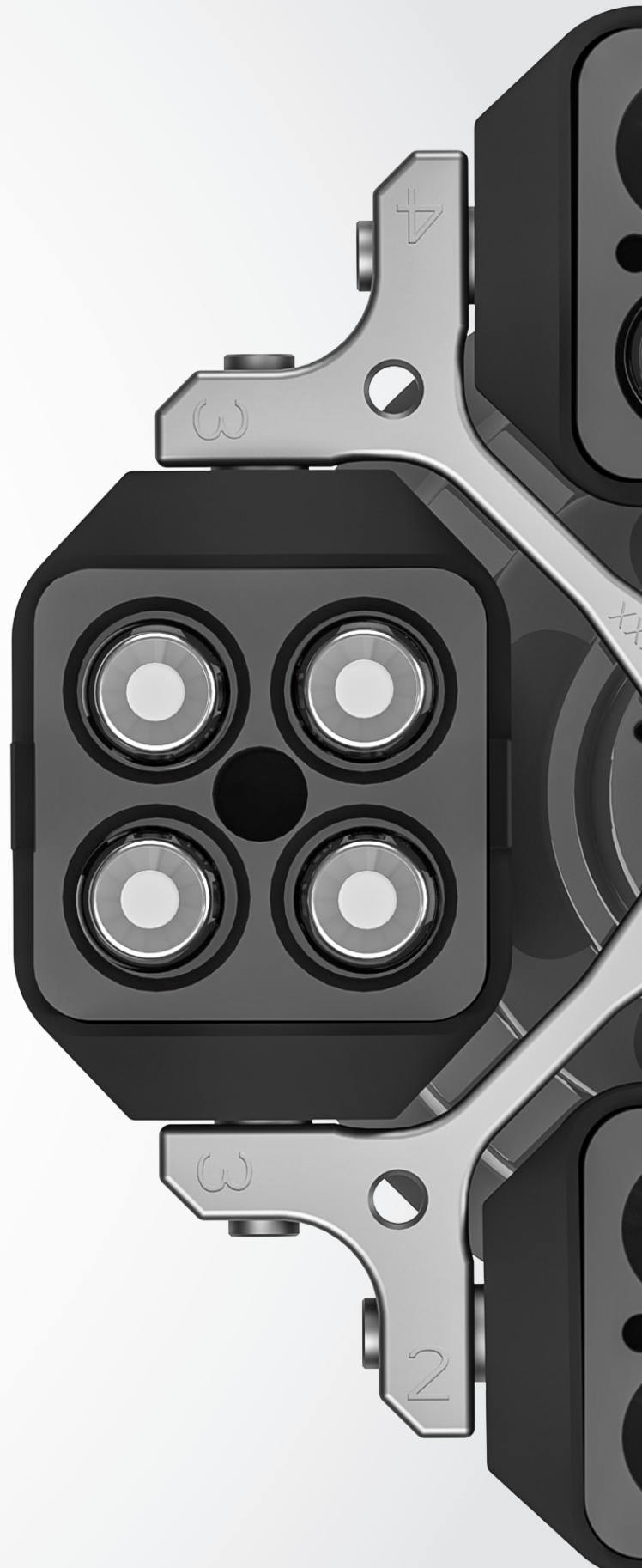


Features

- Up to 24 soil samples in 40 mL vials
- Completely integrated automated Hettich centrifuge
- 3 vortex mixers
- Max. vortex speed: 1000 RPM
- Max. centrifuge speed: 5000 RPM
- 4 syringe tools used
- Dilution module for high solvent volumes
- (Optional) Barcode reader module
- Storage space for waste
- Fully controlled via Chronos
- Supplied with data system (computer, screen, keyboard and mouse)
- Supplied with table on lockable caster wheels
- Method may be customized

Electrical Specifications/ Dimensions

- 120 V~, 60 Hz, 9 A
- 2.5 m x 0.9 m x 1.6 m (W X D X H)

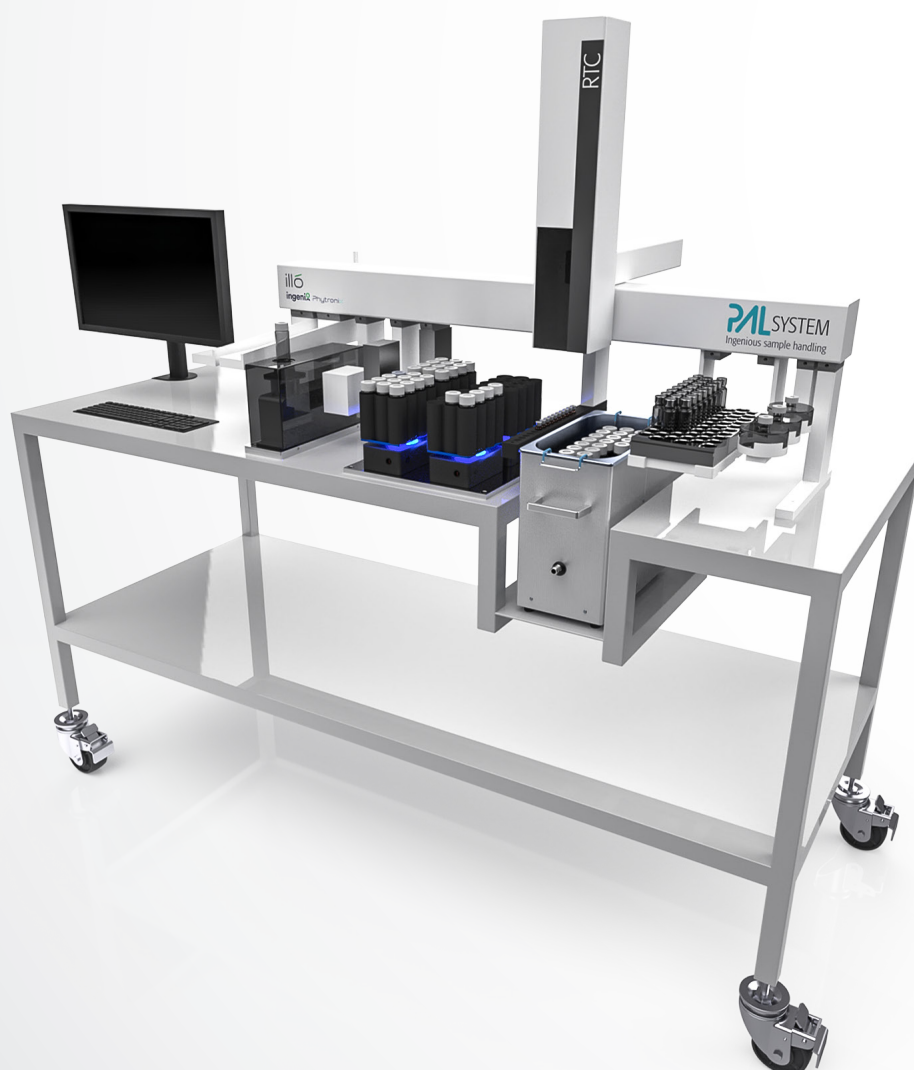




Automated GC sample prep of volatile organic compounds in soil

Volatile Organic Compounds (VOCs) can be found in soil and water following certain industrial, agricultural and domestic processes. These have a high vapor pressure at room temperature which makes them more likely to be emitted from a product or surface into the air. These can severely impact the health of workers or people in the vicinity, indoors and outdoors.

The Illó is an automated process, combining an embedded ultrasonic bath, an automated balance and 4 vortex mixers with a PAL RTC system. This setup allows you to greatly reduce the soil sample preparation time and free personnel for other manipulations.

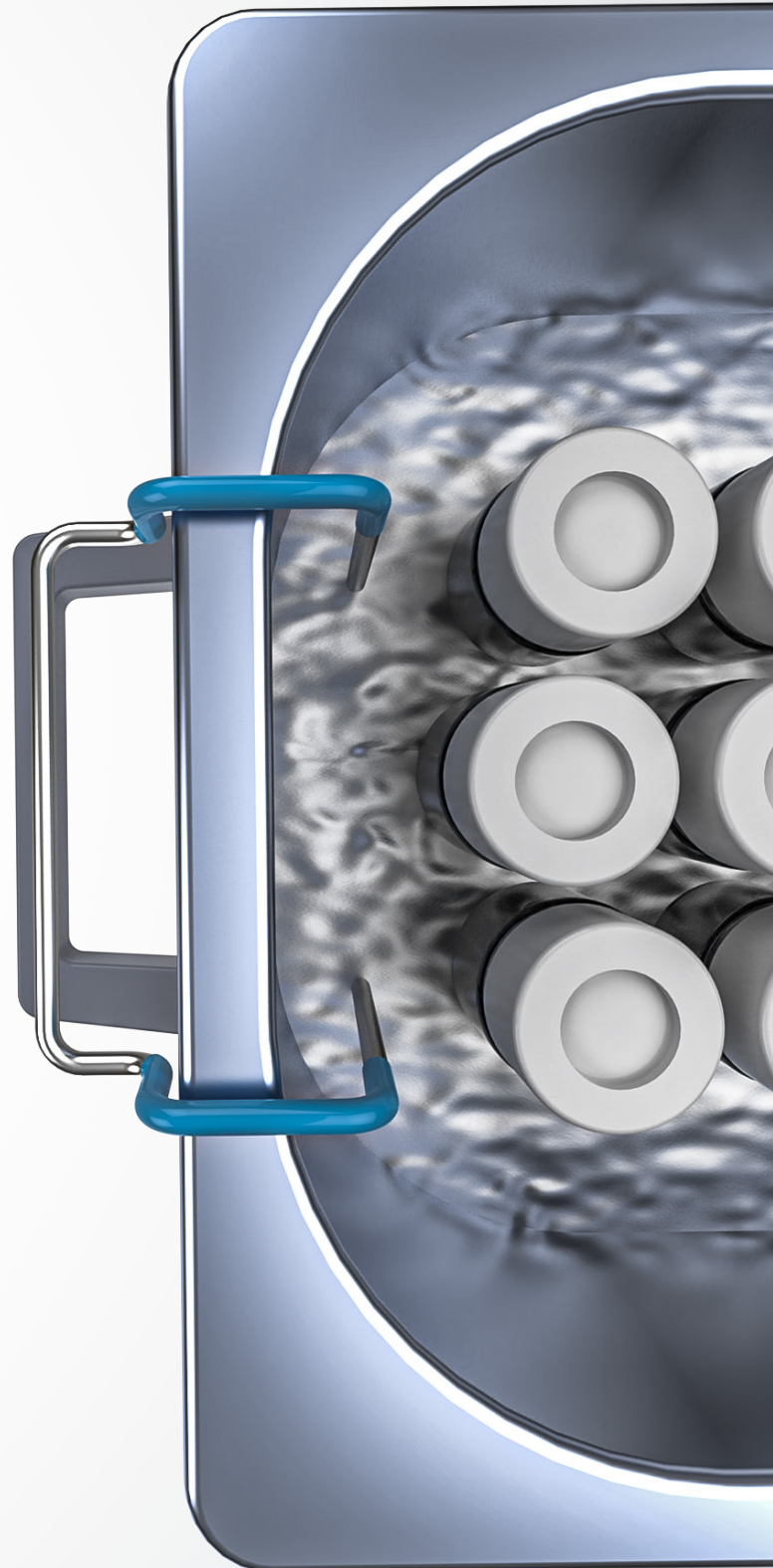


Features

- Up to 20 soil samples in 40 mL vials
- Completely integrated Bandelin ultrasonic bath
- Completely integrated Mettler Toledo balance
- 4 vortex mixers
- Max. vortex speed: 1000 RPM
- Ultrasonic bath capacity: 5.5 liters
- Balance max. capacity: 120 g
- 4 syringe tools used
- Gripper to move vials between positions
- (Optional) Barcode reader module
- Fully controlled via Chronos
- Supplied with data system (computer, screen, keyboard and mouse)
- Supplied with table on lockable caster wheels
- Method may be customized

Electrical Specifications/ Dimensions

- 120/240 V~, 60 Hz, 700 W
- 1.8 m X 0.8 m X 1.6 m (W X D X H)




Phytronix

4535, Boul. Wilfrid-Hamel, suite 120
Quebec, QC, Canada G1P 2J7

Phone 418.692.1414
Toll Free 877.792.6207

 [linkedin.com/company/phytronix](https://www.linkedin.com/company/phytronix)


 [phytronix.com](https://www.phytronix.com)


 Info@phytronix.com


ingenio
by Phytronix

4855, Ambroise-Lafortune,
Boisbriand, QC, Canada J7H 0A4

Phone 450.419.6415
Toll Free 877.792.6207

 [linkedin.com/company/ingenio-by-phytronix](https://www.linkedin.com/company/ingenio-by-phytronix)

 [ingeniosciences.com](https://www.ingeniosciences.com)

 Info@ingeniosciences.com