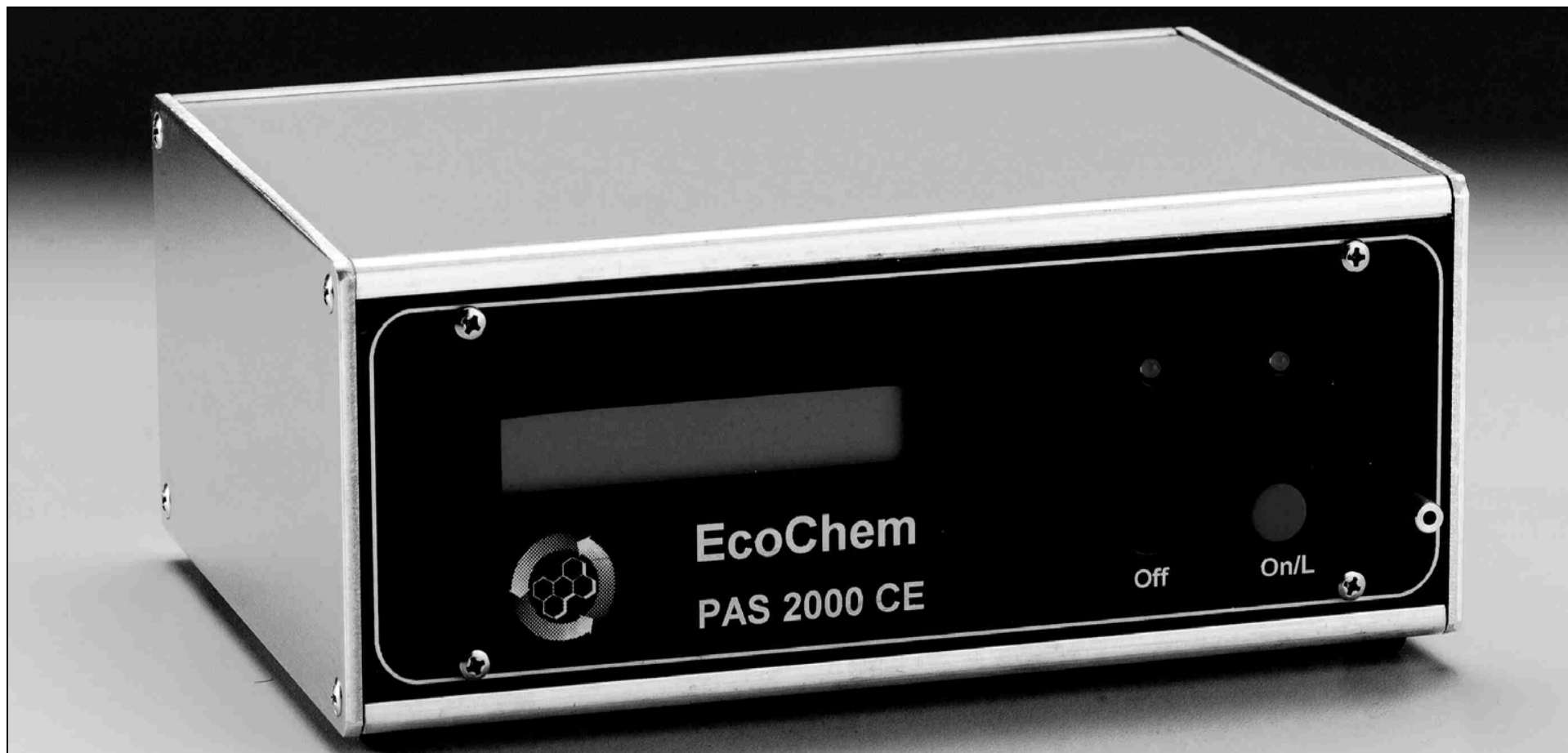


**Compact Real-Time Monitor
for Particle-Bound
Polycyclic Aromatic Hydrocarbons (PAH)**

EcoChem PAS 2000CE



...shown actual size

- ◆ Detects particle-bound Polycyclic Aromatic Hydrocarbons on ultrafine particulate matter in real-time
- ◆ Lightweight, compact and ruggedized construction
- ◆ Battery powered with onboard data storage
- ◆ Applications related to personal exposure in various environments (homes, workplace, automobiles, tunnels etc.)

Measuring Principle

The Photoelectric Aerosol Sensor (PAS) works on the principle of photoionization of particle-bound PAH.

- Using an Excimer lamp the aerosol flow is exposed to UV radiation. The Excimer lamp offers a high intensity, narrow band source of UV radiation. The wavelength of the light is chosen such that only the PAH coated aerosols are ionized, while gas molecules and non-carbon aerosols remain neutral.
- The aerosol particles which have PAH molecules adsorbed on the surface emit electrons which are subsequently removed when an electric field is applied.
- The remaining positively charged particles are collected on a filter inside an electrometer, where the charge is measured. The resulting electric current establishes a signal which is proportional to the concentration of total particle-bound PAH. Also by operating the Excimer lamp in a chopped mode, the PAS 2000 can eliminate the back-ground signal which is sometimes found very close to combustion sources.

The analyzer signal is a measure of total PAH adsorbed on carbon particles and does not speciate the sample.

Calibration

Source-specific calibration curves are available or can be generated where the monitor output is compared to an analytically determined PAH concentration. A site-specific calibration curve can provide greater accuracy for the particle size, charge and PAH distribution specific to the source. In addition to the site-specific curves, an approximate universal calibration curve can be used for screening and real-time trending applications.

Technical Specifications

Display	16 characters with 2 lines LED
Power	115 volts AC / 60 Hz & 220 volts AC / 50 HzMax. Battery 15 volts Lithium Metal Hydride
Range	0 to 1000 ng / m ³
Sensitivity	~ 10 ng / m ³ (actual calibration is site-specific)
Lower Threshold	~ 10 ng / m ³ total particle-bound PAH
Response time	< 10 seconds (adjustable)
Digital Output	RS - 232 (for data download and program upload)
Sample gas	Built-in pump with flowrate controlled at 1 L/min
Operating temp	40 to 104 °F (5 to 40°C)
Dimensions	Height x Width x Depth = 3in x 7in x 5in (68mm x 175mm x 124mm)
Weight	3 lb. (1.5 kg)
Data Storage	8000 Data Points (each data point consisting of : Time, Value)
Data Download	User-friendly PC-compatible graphical software used for downloading the collected data. Flat ASCII file output can also be generated for further analysis (e.g. Microsoft Excel format).

EcoChem Analytics



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