



MERCURY INSTRUMENTS
Analytical Technologies

Member of the envea™ Group



Mercury Tracker-3000 XS

Portable Instrument for Measuring Mercury in Air and Other Gases



The new Mercury Tracker-3000 XS

lighter - smaller - more comfortable

We updated the well-proven Mercury Tracker 3000 IP!

The new **Mercury Tracker-3000 XS** weighs even less, it is smaller, easier to handle and features GPS, a 5.7" color TFT display and a new high performance Eneloop battery pack with minimized self-discharge.



Features and special benefits

- Real time measurement
- High precision measuring principle: atomic absorption (AAS)
- Easy to operate
- Data logger with GPS integrated
- Measuring ranges 0-100 / 0-1000 / 0-2000 $\mu\text{g}/\text{m}^3$
- High resolution 0.0001 mg/m^3
- Shock proof and corrosion resistant for rugged field operation
- membrane pump with long service life
- unsurpassed stable optical bench
- very fast response time
- factory calibration with long-term stability
- waterproof keypad and cable connectors
- operates at least five hours on fully charged Eneloop battery pack
- additional quick swap battery pack (optional)
- rugged and noncorrosive ABS case
- dirt repellent bag with padded top for transport and savekeeping
- probe with ergonomic handle
- comfortable shoulder strap



Measuring principle

The mercury concentration is measured in an optical cell entirely made of a high purity grade fused silica. A maintenance-free membrane pump continuously feeds the sample gas into the measuring cell where the attenuation of a UV beam is measured. Analytical wavelength used is 253.7 nm.

This measuring method is called „Cold Vapor Atomic Absorption Spectrometry“ (CVAAS) , which is extremely sensitive for mercury determination and has been widely used for many years.

Applications

Avoid problems related to mercury contamination!

The **Mercury Tracker-3000 XS** is a lightweight, compact and rugged instrument for measuring the mercury concentration in air.

The **Mercury Tracker-3000 XS** sets the highest standard for portable mercury screening and is used for different applications including:

- Safety at work
- Exhaust gas survey
- Environmental monitoring
- Mercury spills screening
- Hazardous waste inspection
- Investigation of contaminated sites
- Investigation of mercury contamination in air
- Measurement of mercury in scientific research



Analytical Performance

The **Mercury Tracker-3000 XS** uses a high-frequency driven electrodeless mercury discharge lamp (EDL) as UV source. It generates emission lines of an extremely narrow bandwidth which are congruent with the absorption lines of the Hg atoms to be measured. Cross-sensitivities are thus minimized.

Contrary to gold film based systems, the **Mercury Tracker-3000 XS** shows virtually no interference to hydrogen sulfide (H₂S) or water vapor. The extremely high stability of the UV source is a result of the reference detector method which is applied in the **Mercury Tracker-3000 XS**. Total background noise is less than 0.1 µg/m³. To prevent temperature drift both the lamp unit and the detectors are temperature-stabilized.

The instrument is factory calibrated before delivery. The calibration remains stable over a long period of time.

Easy to operate

The user controls the **Mercury Tracker-3000 XS** by menu-guided inputs on a waterproof membrane keypad and a 5.7" TFT graphic display with LED backlight. After switch-on the light source is stabilized (approx. 1 - 5 minutes) and the baseline is automatically adjusted by the auto zero function. Measurement then starts automatically, continuously indicating the mercury concentration of the air both numerically and graphically in real time.

The following settings can be entered in the parameters menu: duration and repeat interval of Auto Zero, selection of the concentration unit (µg/m³ or ppb), measuring range (0-100, 0-1000, 0-2000 µg/m³), input of three different alarm levels, calculation of a mean value over three freely selectable time intervals, data logger and GPS activation.

The device also features a serial interface (USB) as well as bluetooth for data transfer to a PC. All data can be saved as ASCII or EXCEL®-files. The necessary software (Mercury Instruments Hg-Transfer) is included.

In case of a malfunction the operator of the **Mercury Tracker-3000 XS** is warned via messages on the display.

Mobile Use

The **Mercury Tracker-3000 XS** runs at least five hours on rechargeable 12V Eneloop batteries. For longer employments the battery pack can quickly be swapped for fully charged spare batteries (additional Eneloop battery packs as option).

An intelligent charger unit which ensures to keep the battery capacity at maximum comes with the instrument.

With an optionally available cigarette lighter adapter the instrument can be powered by the car battery or another 12V DC source.



The comfortable shoulder strap allows for easy field work without fatigue. The probe makes it easy to measure the areal distribution of mercury concentrations. The probe features an ergonomic handle and is easily demountable. It can be stowed away in a separate bag.

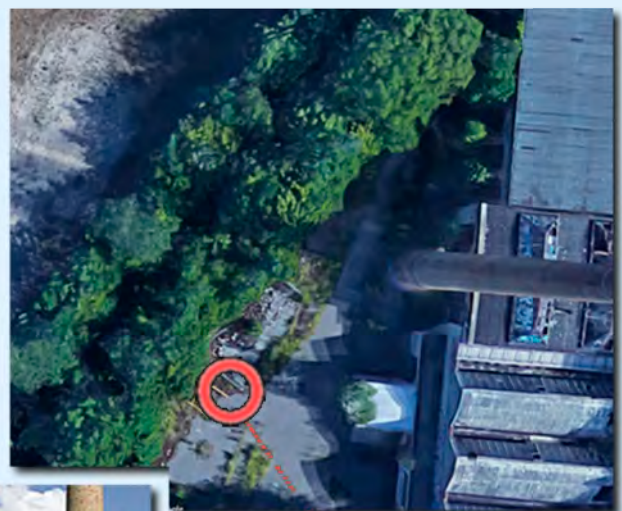
Data logger and GPS

The data logger of the **Mercury Tracker-3000 XS** saves the measurements to a built-in 4 GB SD card.

The data logger allows for an automatic and continuous storage of the measured concentrations. The interval between measurements to be saved can be set to a time ranging from 1 to 999 seconds (logging rate).

Along with the concentration the saved data set includes time, date and the geographical position (if desired).

The built-in GPS receives US-GPS, Galileo, GLONASS and others. This increases the accuracy of the positioning and ensures an optimized signal reception.



Tracker-3000 XS : Technical Specifications

Measuring principle	UV absorption (CVAAS), wavelength = 253.7 nm
UV source:	Electrodeless low-pressure mercury lamp (EDL)
Stabilization method:	Reference beam method
Optical cell:	Fused silica (Suprasil)
Measuring ranges:	• 0 - 100 µg/m³ • 0 - 1000 µg/m³ • 0 - 2000 µg/m³
Sensitivity:	0.1 µg/m ³ (0.01 ppb)
Response time:	Approx. 1 second, real time measurement
Alarm:	Exceedance of concentration, 3 levels programmable
Status alarms:	• measuring cell soiled • battery state • UV lamp exhausted
Control pad:	Waterproof membrane keypad
Measurement display:	5.7 inch TFT graphical color display, with LED backlight
Signal outputs:	• USB • Bluetooth
Software for data transfer:	Mercury Instruments „Hg-Transfer“ included on delivery, export of data: EXCEL® and ASCII format
Data storage:	Built-in Data logger, internal 4 GB SD-card, automatic time and date stamp, GPS stamp if activated
GPS:	Built-in, receives US-GPS, Galileo, GLONASS and others for increase in positioning accuracy and improved reception
Internal power supply:	Rechargeable 12 V Eneloop batteries with min. capacity of 5 hours and minimized self-discharge, quick swap battery packs as option
External power supply:	• 230 VAC/50Hz • 110 VAC/60 Hz; with mains adapter • external 12 V DC sources (cigarette lighter adapter optional)
Dimensions:	29 x 17 x 14 cm (11.6“ x 6.8“ x 5.6“) (W x H x D)
Weight:	approx. 2.5 kg (incl. battery pack)



As a leading supplier of high precision analytical equipment, we strive at all times to offer top quality solutions. Our products are manufactured according to the ISO 9001 quality regulations.

The Response to an Analytical Challenge: Mercury Instruments

Even nowadays quantitative trace analysis of mercury is still a challenging task for the analyst. Mercury Instruments is at all times striving to develop leading edge products for mercury analysis at the highest technical level. The range of applications for our mercury analyzers is unique world-wide.



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