GasScouter

CO_2, CH_4 and H_2O

Mobile Gas Concentration Analyzer

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PICARRO

The **Picarro GasScouter G4301** is a new-generation, light-weight, portable, battery-powered cavity ring-down spectroscopy (CRDS) gas concentration analyzer designed for science on the move. It is a perfect mobile solution for high-precision greenhouse gas measurements in the world's most challenging, remote environments. The GasScouter simultaneously and continuously measures CO_2, CH_4 and H_2O concentrations over a wide dynamic range, enabling effective background and emissions measurements. This makes it ideal for natural gas leak detection and for exact quantification of greenhouse gas from biogenic and anthropogenic sources, especially in remote locations.

University of Copenhagen

Scientists from the University of Copenhagen used the Picarro G4301 GasScouter to determine the magnitude and extent of atmospheric CH_4 uptake across a variety of previously unexplored dry and well-drained tundra landforms which occupy vast areas in the ice-free part of Arctic and High Arctic Greenland. The high precision of the GasScouter allowed the scientists to achieve reliable flux estimates in sub-ambient CH_4 concentration levels with a 4-minute chamber enclosure time per measurement.

The light weight, time-efficiency and low-power consumption enabled us to reach areas that have typically been considered out of reach for real-time high-precision measurement of important greenhouse gases.

Jesper Riis Christiansen and Christian Juncher Jørgensen, University of Copenhagen

Koveva Ltd.

Koveva strives to find localized, distributed energy markets and to utilize supplies of energy that are otherwise wasted. Koveva used the Picarro GasScouter to measure CH_4 fluxes from a coal outcrop site in the Four Corners region of the western U.S. The measurements ranged from 1 to 73 µmol/m²/s. Flux measurements took between 10 to 70 seconds, and maximum CH_4 concentration measured 230 ppm (typical methane concentration in the atmosphere is 2 ppm).

Great precision and low detection limit allowed flux measurements across 4 orders of magnitude.

Taku Ide, Koveva

The Picarro GasScouter weighs just 23 pounds (10.4 kilograms) with a power consumption of 25 watts. All essential components are housed within its compact 14-inch (35.6 cm) wide, 6.95-inch (17.7 cm) deep and 18.25-inch (46.4 cm) backpack case. A 223 watt-hour (Wh) lithium-ion (Li-ion) rechargeable battery provides over 8 hours of continuous operation, and it is hot swappable for uninterrupted operation. The GasScouter is also an excellent instrument for soil flux measurements. The sampling system has an integrated pump. It can be used for continuous field mapping or in closed-loop configurations for soil chamber studies, which makes it a versatile analyzer for field applications.

ICOS | INTEGRATED CARBON OBSERVATION SYSTEM

The ICOS Atmospheric Thematic Centre Metrology Lab conducted an independent evaluation of the Picarro GasScouter. Assessments included continuous measurement repeatability (CMR), short-term stability and drift, short-term repeatability (STR), long-term repeatability (LTR), atmospheric pressure sensitivity, temperature sensitivity and more.

Picarro GasScouter Accessories enable precise mobile measurements far off the grid. The **GPS Kit** includes an antenna and module which quickly and easily install via one of the two USB ports. Complementary software allows GPS parameters to be included in the raw data file, which can be exported to KML format for mapping with Google Earth.

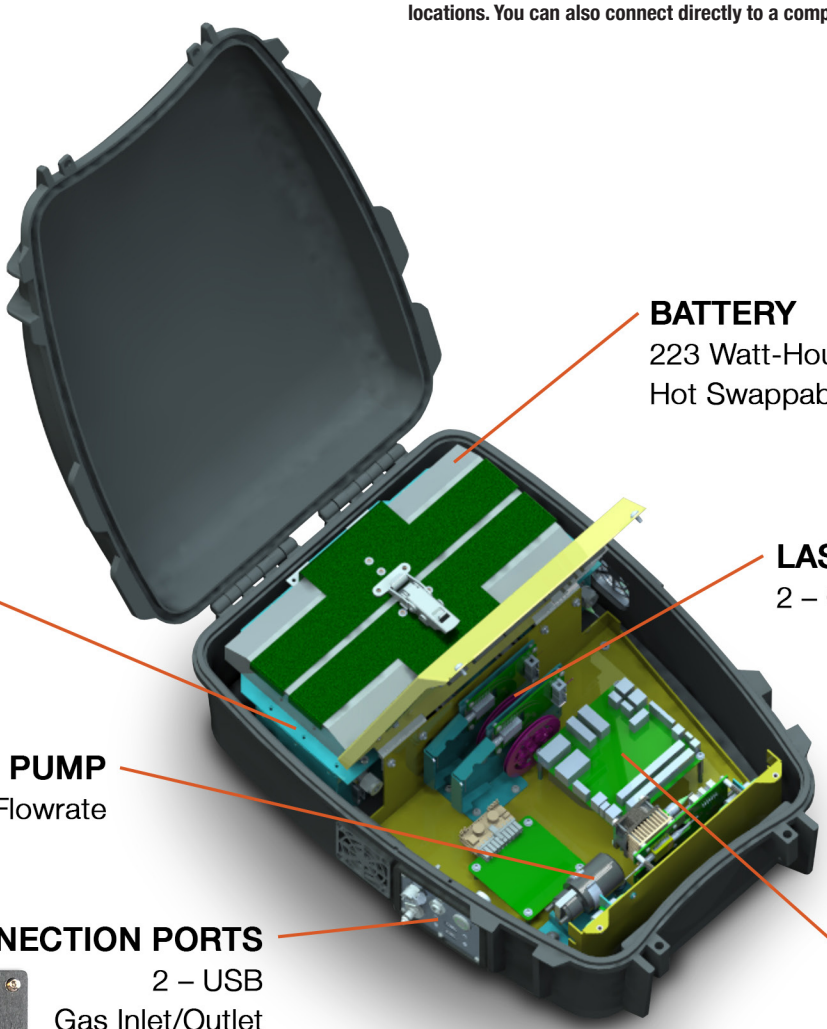
The **Mobile Soil Flux System** includes a stainless steel gas flux chamber with quick connect-disconnect fittings that attach to the GasScouter gas inlet-outlet ports. Complementary software computes CO_2 and CH_4 soil flux measurements in real-time on a mobile tablet or smartphone.

GasScouter

Patented Cavity Ring-Down Spectroscopy (CRDS) Technology

Picarro patented CRDS technology enables an effective measurement path length of up to 20 kilometers in a compact cavity, which results in exceptional precision and sensitivity from a small-footprint analyzer. A meticulously designed small optical cavity incorporates precise temperature and pressure control. The result is an analyzer that delivers a best-in-class combination of precision, accuracy, low drift and ease-of-use.

The GasScouter has a built-in WiFi card to connect with a tablet or smart-phone for viewing its web-based graphical user interface (GUI) in remote locations. You can also connect directly to a computer by USB port.



BATTERY
223 Watt-Hour (Wh) Li-ion
Hot Swappable

LASERS
2 – CH_4 and CO_2

CAVITY BOX
CRDS Technology

VACUUM PUMP
1 L/min Flowrate

CONNECTION PORTS
2 – USB
Gas Inlet/Outlet
Charger

CPU
Intel NUC
60 GB SSD
4 GB RAM
WiFi Card

PICARRO

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