# EGM-5

## Portable $CO_2$ Gas Analyzer

### With Optional $H_2O$ and $O_2$ Measurement

PPSystems
Science made seamless®

Optional WiFi: Monitor the EGM-5 remotely from your browser in real time.

### Portable. Accurate. Unprecedented Versatility.

Compact, intuitive, and field-ready, the EGM-5 Portable $CO_2$ Gas Analyzer delivers precise, reliable measurements—anywhere. Its innovative Auto-Zero technology ensures exceptional long-term stability and accuracy—without the need for recalibration. The versatile EGM-5 works seamlessly with a range of field-ready, plug and play accessories for soil, canopy, and environmental monitoring. With minimal maintenance and effortless operation, it sets a new standard for portable $CO_2$ measurement performance.

Since 1984, PP Systems has set the standard for precision $CO_2$ measurement. Built on decades of proven infrared gas analysis expertise, the EGM-5 features a non-dispersive infrared (NDIR) measurement system with advanced microprocessor-based signal processing for unmatched specificity to $CO_2$. Our innovative Auto-Zero technology provides rapid warm-up, exceptional long-term stability, and sustained calibration integrity. It also eliminates the common issues that compromise data quality—such as span drift, detector aging, and contamination—ensuring every measurement is as precise as the first.

## Integral Air Sampling Pump

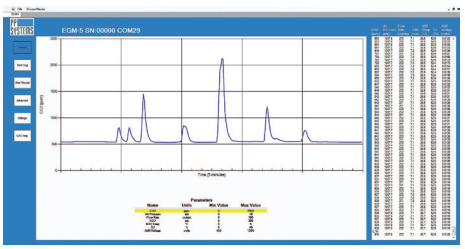
A miniature, long life air sampling pump is included as standard for dynamic gas sampling. The pump can easily be disabled for static measurements.

## Touch Display

The EGM-5's large touch display features simple and intuitive system navigation as well as excellent viewing under high sunlight.

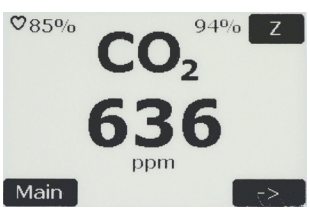
## Software

Our Windows-based **GAS** software package is included for use with the EGM-5 for monitoring, logging and recording environmental sensor data.



## Powerful Battery Technology

The EGM-5 includes a powerful rechargeable Li-ion battery for up to 16 hours of field use and an AC power supply for continuous lab operation.




## Product Features

- High precision, compact, non-dispersive infrared gas analyzer for $CO_2$
- Accuracy: < 1% over calibrated $CO_2$ range
- $CO_2$ ranges up to 100000 ppm (10%)
- Automatic pressure & temperature compensation
- Powerful internal, rechargeable battery providing up to 16 hours of continuous use
- Numeric & graphical data display in real time
- Data storage and transfer via USB flash drive
- Operation from AC or DC power inputs
- Large touch display with excellent sunlight readability & optimized viewing angle
- Built-in air sampling pump & electronic flow sensor
- Voltage & digital output
- Audible & visual alarms/warnings
- Wide range of accessories & sensors available
- WiFi (Optional)

# Field-ready plug & play accessories to expand your research capabilities

## Soil $CO_2$ Efflux

**SRC-2 Soil Respiration Chamber**

## PAR

**Full-spectrum Quantum Sensor**

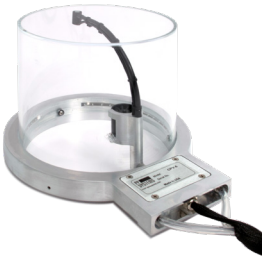
## Soil Temperature

**STP-2 Soil Temperature Probe**

## Soil Moisture & Soil Temperature

**Stevens HydraProbe Soil Moisture & Soil Temperature Sensor**

## Net Canopy $CO_2$ Flux



**CPY-5 Canopy Assimilation Chamber**

## Temperature/PAR

**TRP-3 Temperature & PAR Probe**

## Static Sampling

**Sample Injection Kit**

## Optional Integrated Options

- $H_2O$ Sensor
  Range: 0-Dewpoint (mb)
  Accuracy: < 2% RH
- $O_2$ Sensor
  Range: 0-100%
  Accuracy: ≤ 15 seconds at 23 ± 2°C
  Linearity: ± 1.0% of full scale
- WiFi
  Monitor the EGM-5 remotely from your browser in real time.

# Technical Specifications

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|---|---|
| Analysis Method | Non-dispersive infrared, configured as an absolute absorptiometer with microprocessor control of linearization |
| $CO_2$ Measurement Ranges<br>*Please specify at time of order* | 0-1000 ppm (µmol mol$^{-1}$)<br>0-2000 ppm (µmol mol$^{-1}$)<br>0-5000 ppm (µmol mol$^{-1}$)<br>0-10000 ppm (µmol mol$^{-1}$)<br>0-20000 ppm (µmol mol$^{-1}$)<br>0-30000 ppm (µmol mol$^{-1}$)<br>0-50000 ppm (µmol mol$^{-1}$)<br>0-100000 ppm (µmol mol$^{-1}$)<br>Readings are automatically corrected for temperature and pressure. |
| Pressure Compensation Range | 55-115 kPa |
| Accuracy | < 1% of span concentration over the calibrated range but limited by the accuracy of the calibration mixture |
| Linearity | < 1% throughout the range |
| Stability | Auto-Zero at regular intervals corrects for sample cell contamination, source and detector aging and changes in electronics. |
| Calibration | User-programmable calibration (if required) |
| Warm-up Time | Approximately 15 minutes |
| Sampling Rate | Sample data is averaged and output every 1.0 seconds. (1 Hz) |
| Sampling Pump | Integral air sampling pump<br>Pump can be programmed for both dynamic and static sampling. |
| Gas Flow Rate | 200-500 cc/min (280-340 cc/min is optimal)<br>An internal electronic flow sensor monitors flow rate. |

| | |
|---|---|
| Terminal Block | 10 pin terminal block for system inputs and outputs |
| Analog Output | 0–2.5V ($CO_2$ range selectable) |
| Digital Output | USB |
| Environmental Sensor Inputs | 2 inputs available for use with external chambers and environmental sensors |
| Alarm | Visual and audible alarm/warnings<br>2 relay contacts (Alarm1 and Alarm2) |
| Data Storage (USB) | USB Flash Drive port for data storage in multiple formats |
| Mini USB | For connection to external PC |
| Touch Display | 2.7" electronic paper touch display with 264 x 176 pixel resolution |
| Power | Internal, rechargeable 7.4V, 8.7 Ah Li-Ion battery provides up to 16 hours of continuous use. Battery life will be reduced if used with external accessories/sensors. |
| Power Consumption | Warm up: 12W (12V @ 1.0A)<br>Normal operation: 6W (12V @ 0.5A) |
| Enclosure | Rugged, ergonomic, lightweight aluminum with polyurethane base |
| Gas Connections | Two quick connect fittings (inlet and exhaust) for use with 1/8" (.125") ID tubing |
| Operating Temperature | 0–50°C, non-condensing<br>External filtration is recommended in dirty/dusty environments. |
| Dimensions | 20 cm (L) x 20 cm (H) 10 cm (W) (Enclosure only) |
| Weight | 1.5 kg |

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