

BPC[®] Core

Low gas volume and flow, high accuracy and precision



Low gas volume and flow

High accuracy and precision



BPC Core

BPC Core is a self-contained, high precision gas volume and flow meter array designed for monitoring of up to 9 or 18 parallel gas streams. Its distinctive integrated data acquisition and processing systems enable it to operate autonomously, eliminating the need for a computer or any other external device. Yet, users can conveniently access real-time measurements remotely using any smart devices with a web browser.

Effortless operation, maximum convenience

It's all automatic! This translates to reduced labour costs, eliminating the need for expert assistance, and no more jotting down results in Excel files or notebooks. A user-friendly, intuitive interface simplifies the setup and monitoring of gas evolution or consumption processes. Whether it's a research project or an industrial application, using BPC Core is a breeze. Just fill the measurement flow cells of BPC Core with deionized water, connect the unit to a power source, then start your experiment.

Dual measurement resolutions

BPC Core offers two measurement resolutions - 2 ml and 9 ml – that users can effortlessly switch between.

Ample storage capacity and extensive detection range

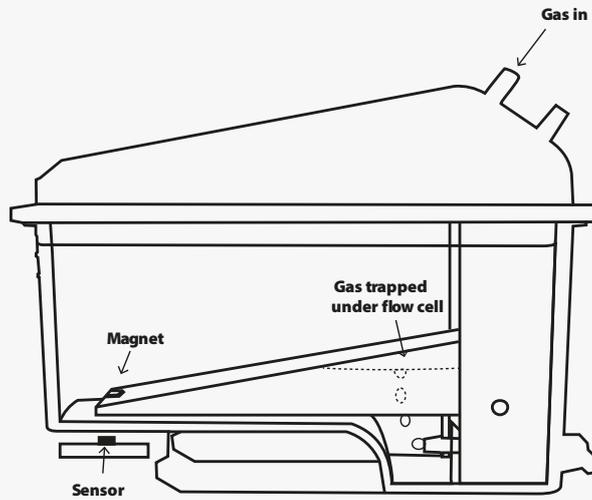
BPC Core boasts impressive data storage, capable of accommodating up to 130 000 liters of gas measurement data. This extensive capacity allows users to monitor lengthy and high-accumulation gas evolution or consumption processes effectively. Additionally, the innovative dual-resolution measurement technique offers an exceptionally wide detection range, spanning from 0.2 – 6000 ml/h, making it a suitable choice for a variety of laboratory and small pilot scale applications.

Precise agitation control

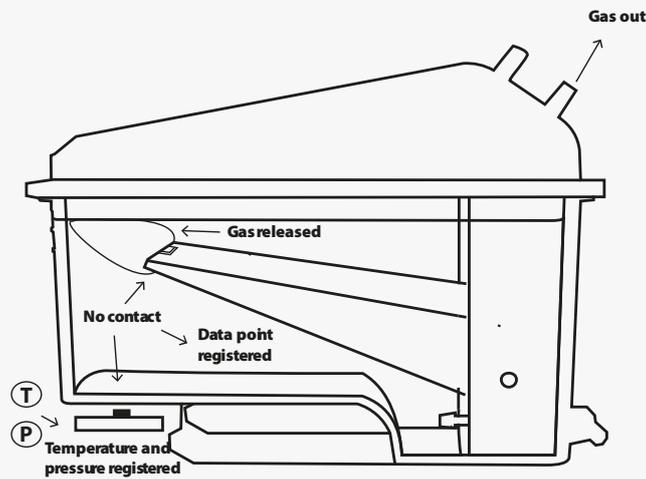
BPC Core offers precise agitation control with its built-in capability to manage agitation system from BPC Instruments. Users can adjust speed, direction, and on/off timings to meet any specific requirements, ensuring thorough mixing.



Working principle



- 1.** Gas is collected under a flow cell in a chamber filled with water. While the flow cell is in its sitting position, a magnet located at its end is in contact with a sensor below it.



- 2.** Once a certain volume has been collected, the force of buoyancy makes the flow cell open and release the gas. The magnet at the tip of the flow cell then loses its contact with the sensor and a measurement point is detected. For each point, the ambient temperature and pressure is registered to be used adjusting the gas volume to standard conditions.



BPC Core offers two measurement resolutions - 2 ml and 9 ml – that users can effortlessly switch between

Measure gas volume and flow for a wide range of applications

Versatile gas volume and flow measurement

BPC Core offers users the ability to measure low gas volume and flow with exceptional accuracy and precision. This intelligent analytical instrument finds application in a wide array of fields, serving both research and industrial purposes, including:

- Biogas production
- Animal nutrition studies
- Wastewater analyses
- Ethanol and yeast fermentation
- Biohydrogen production
- Greenhouse gas emissions
- Evaluation of microbial communities and their activity and more

Durable and reliable

Designed and manufactured in Sweden, BPC Core embodies the finest aspects of Scandinavian design, seamlessly blending form and function for exceptional quality and reliability. Rest assured, BPC Core safeguards user's data, even in the event of a power or system failure.

Real-time normalisation for consistent and reliable results

BPC Core incorporates built in sensors for temperature and pressure compensation, enabling real-time normalisation of gas volume and flow to a standard condition. This means that, regardless of the location and operational environment, the measured data remains consistent, allowing for reliable comparisons with others.

AURORA Software

– pre-installed on BPC Core



Elevate process analysis and monitoring with Aurora™ software

Aurora™ embodies BPC Instruments' state-of-the-art software solution for gas volume and flow measurement. Its user-friendly design streamlines experiment setup, real-time monitoring of gas evolution or consumption, and the seamless retrieval of results and report generation. Aurora™ is seamlessly integrated as a web-based software, a built-in component of the instrument package, offering pre-installed access and obviating the necessity for software licenses or external computer installations.

Empowering gas volume and flow measurement with embedded computing

BPC Core incorporates embedded computing with an onboard microcontroller for inbuilt storage and data processing. This ensures all gas volume and flow measurements are securely stored locally, minimizing the risk of data loss in the event of a workstation crash. This safeguard can potentially save weeks of research and development work.

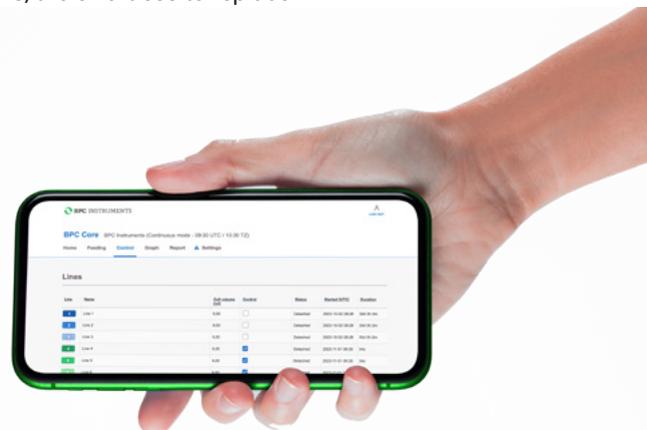


Simplified maintenance and calibration-free

BPC Core's modular design streamlines the maintenance process, making it more accessible than ever before. The calibration-free flow cell chambers, available in two resolutions, are effortless to replace.

Access results anywhere, on any device

BPC Core seamlessly connects to user's local network or the internet, thanks to its integrated software feature for identifying IP addresses. This means that users from both diverse industries and academic institutions worldwide can conveniently monitor real-time measurements from any smart device with standard web browser, including computers, tables and mobile phones.



BPC Core configurations

BPC Core offers two measurement resolutions - 2 ml and 9 ml – that users can effortlessly switch between.

BPC Core (18 channels)



BPC Core Light (9 channels)



Simplify experiment setup, monitoring, and data sharing for increased efficiency



Web links

User manual

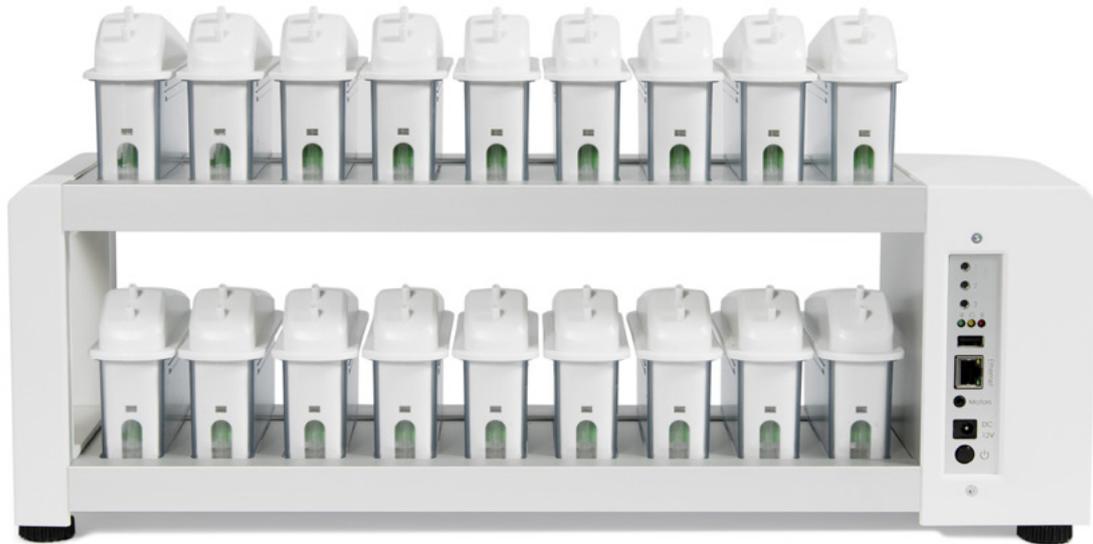
BPC instruments website

Webshop

Features

- **Web-based convenience:** user-friendly web-based software runs on an embedded server, eliminating the need for software installation on PC, tablet or smartphones.
- **Remote accessibility:** BPC Core can be accessed both locally and remotely from any device with a web browser, ensuring flexibility and convenience.
- **Automated compensation:** automatic real-time pressure, temperature, and moisture compensation for accurate measurements.
- **Calibration-free operation:** BPC Core operates without the need for calibration, simplifying maintenance and ensuring consistent performance.
- **Multiplexing potential:** take advantage of the multiplexing capability, allowing simultaneous batch and continuous analysis at different start-up times. Benefit from the flexibility to operate both batch and continuous operational modes effortlessly. Seamlessly switch between batch and continuous operation, empowering users with versatile experimentation options.
- **Easy maintenance:** the modular design of BPC Core facilitates easy exchange of components, making maintenance hassle-free.
- **Local data storage:** all data is stored locally on the instrument, eliminating the dependence on an external computer and ensuring data security.
- **Effortless data processing:** export data as a spreadsheet for further analysis, featuring a uniform time axis for easy processing and interpretation.
- **High data storage capacity:** up to 130 000 liters of gas data storage capacity enable extensive data collection and analysis.
- **Real-time measurements:** simultaneous monitoring of multiple gas types.
- **Gas composition estimates:** connect in series to get real time estimation of gas composition.
- **Agitation control:** capability to control BPC Instrument agitation system.
- **Customized output:** generates data points at various time intervals, from every minute to once daily.
- **Dual measurement resolutions:** switch between 2 ml and 9 ml resolution for flexibility.
- **Versatile operation:** operate in both batch and continuous modes for a wide range of applications.

Technical specifications



Technical

Built-in sensors: temperature, pressure, hall, accelerometer

Connections: Ethernet, power supply, USB B, motor control

Display: OLED 2.8" 256 x 64 white

Housing: aluminium and plastic

Power supply: 12 V DC / 1.0 A with 100-240 VAC

Usage: Indoor

Measurement medium: deionised or distilled water

Operation temperature: 0 - 50 °C

Operation pressure: -50 – 50 mbar

Measurement and weight

BPC Core base unit: 55 x 19 x 17 cm; 3000 g

Flow cell unit: 138 x 102 x 45 mm; 134 g (w/o water)

Power supply unit: 89 x 48 x 33 mm; 127 g

Gas connector diameter: ID: 2.4-2.6 mm; OD: 4.2-4.7 mm

Recommended tube size: ID: 3.2 mm; OD: 6.4 mm

Measurement performance

Working principle: liquid displacement and buoyancy

Number of flow cell units: 18 or 9

Measurement resolution: 2 and 9 ml

Detection capacity: 30 000 litres for 2 ml flow cell and 130 000 litres for 9 ml flow cell

Measuring range: 0.2 to 1500 ml/h for 2 ml flow cell and 1 to 6000 ml/h for 9 ml flow cell

Repeatability: CV ≤ 3% for 2 ml flow cell and CV ≤ 1% for 9 ml flow cell

Gases: Non aggressive gases (e.g. CH₄, CO₂, H₂, N₂)



Your user experience is a top priority for us

We take pride in providing support throughout the lifetime of our products. This applies to products covered under warranty, and even products where the warranty period has expired. Our goal is to ensure your instrument always works and continually delivers value.

From academic know-how to commercial products

Founded in 2005, BPC Instruments AB has become a successful company under the leadership of its co-founder and lead inventor, Dr. Jing Liu, who currently serves as the CEO. Leveraging nearly 20 years of industry-leading research in the development of smart analytical instruments, BPC Instruments has made a significant impact in the market.

BPC's impressive portfolio encompasses a range of exceptional products, including two flagship products. The first is the Automatic Methane Potential Test System (AMPTS®), which has become the preferred analytical instrument for conducting various anaerobic batch fermentation tests. The second is the Gas Endeavour®, a novel analytical platform that enables the determination of materials' biodegradability, analysis of bacteria respiration, and performance of biological batch fermentation assays under both anaerobic and aerobic conditions. BPC® Blue is a novel respirometer based on the Gas Endeavour® platform, specifically designed for assessing the biodegradability of plastics in both aerobic and anaerobic environments.

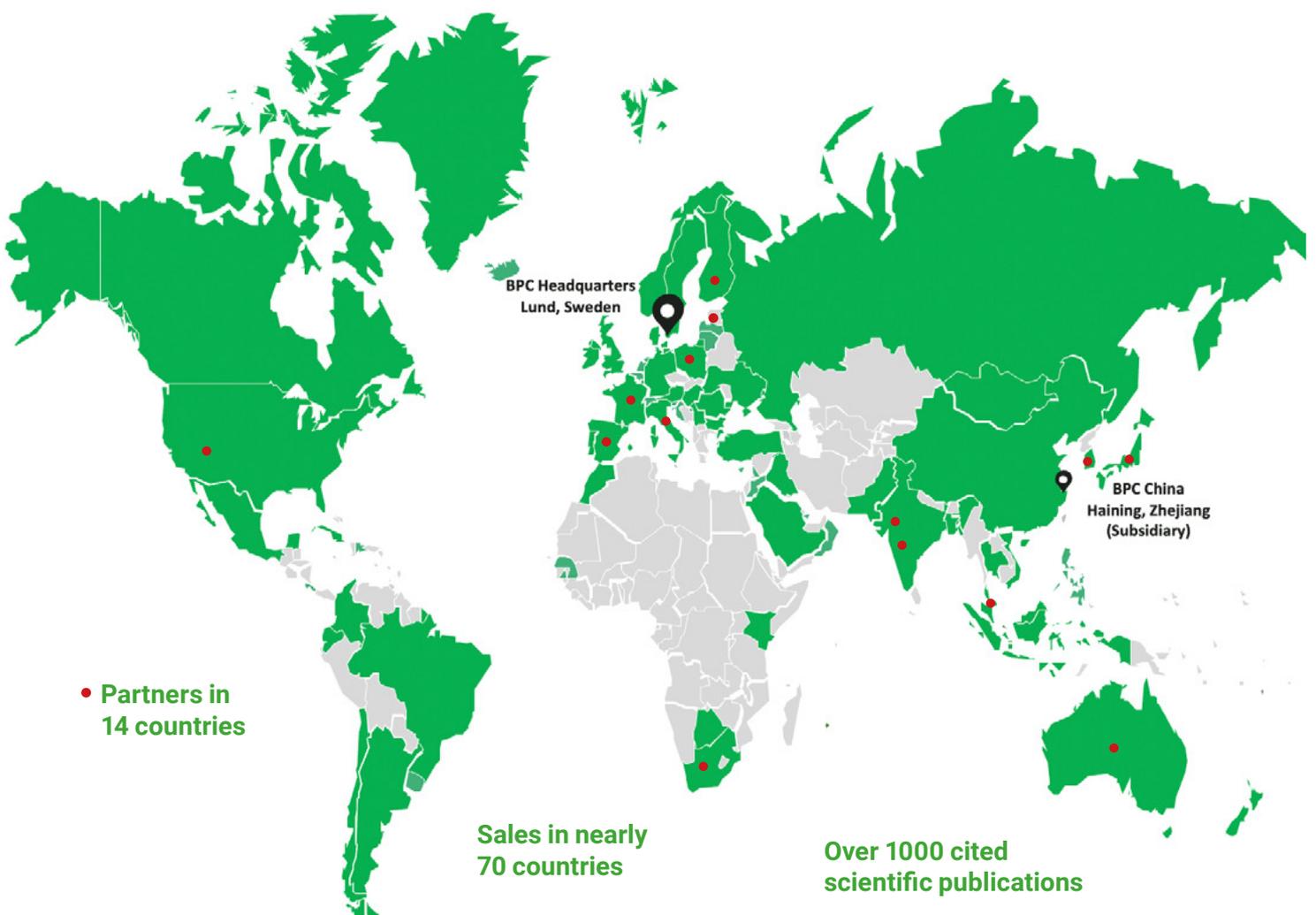
These automated analytical devices offer an abundance of benefits, significantly enhancing operational efficiency while reducing both time and labor requirements. They boast a remarkably user-friendly interface and can be accessed remotely, allowing for convenient retrieval of meticulously collected data whenever necessary. Moreover, these automated analytical devices provide standardized measurements, data, and reports, supplying clear and comparable information upon which evidence-based decisions can be confidently made.

“Our focus is on investing in innovation and developing intelligent instruments, maintaining top-notch product quality across our portfolio, and prioritizing customer service by meeting their needs.”

Dr. Jing Liu, CEO and co-founder of
BPC Instruments AB

What we do

BPC Instruments brings to market analytical instruments enabling more efficient, reliable, and high-quality of research and analysis for industries in renewable bioenergy and environmental biotechnology. Our instruments are designed and manufactured in Sweden, incorporating the best elements of Scandinavian form and function for optimal quality and reliability.





Excellence is built on precision and accuracy

BPC Instruments is a global Swedish-based technology company developing and offering analytical instruments enabling more efficient, reliable, and high quality of research and analysis for industries in renewable bioenergy and environmental biotechnology. The result is not only higher accuracy and precision, but also significant reduction in time consumption and labour requirement for performing analyses. BPC Instruments' innovative products offer high-quality hardware and software based on deep knowledge and experience of target applications. The solutions are the first of their kind, making the company a pioneer in its field. Today, BPC Instruments exports to nearly 70 countries around the world.



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Visit BPC Core
product page

