



## High-Resolution Behavioral and Metabolic Phenotyping Systems for Rodents





## See What Others Miss



**Promethion Core® is the only metabolic and behavioral phenotyping system that enables you to tightly synchronize metabolic data with behavioral events.**

You will see every aspect of metabolism and behavior more clearly, with finer detail, quality, and repeatability—giving you complete confidence in your data.

Real-time data acquisition and analysis enables a new level of power to access, visualize, re-analyze and report study information. Sable's unique raw data storage protocol means there are no hidden algorithms or pre-conditioning of data—just fully traceable results that are available anytime for re-analysis. We make it easy for you to extract the parameters important to your research.

**Promethion Core is designed by scientists, for scientists.**

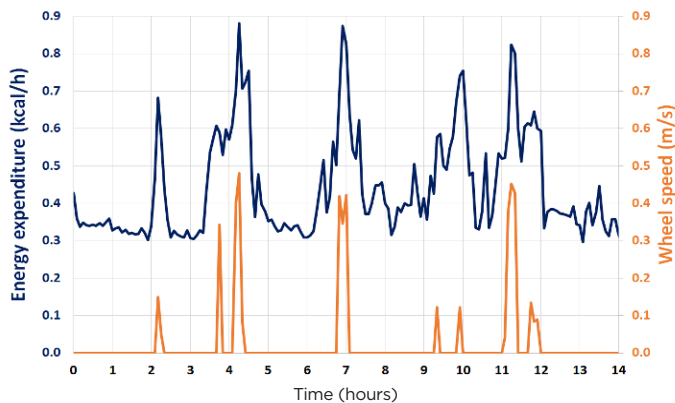
Our knowledgeable staff assists you every step of the way, including experimental design, system configuration, setup, training, and ongoing support.



## Temporal Resolution Comparison: Promethion Core vs. Other Systems



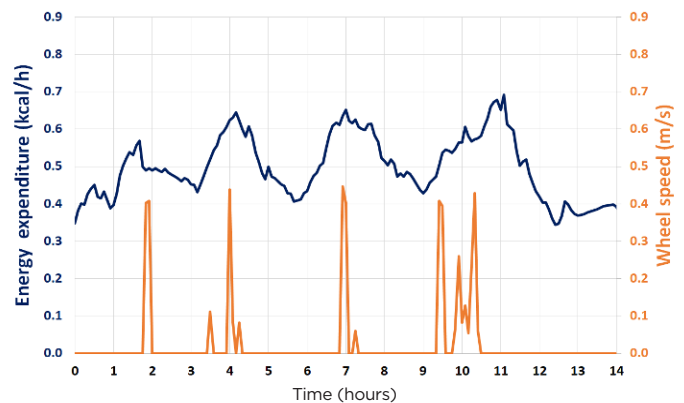
### Fast Response for Synchronized Results



**Promethion Core multiplexed system** allows you to realize the full benefit of high resolution performance. The data above shows the synchronization of activity with energy expenditure. The EE graph shows sharp peaks and stable baselines enabling accurate active and resting energy expenditure calculation.

### Competitor's System

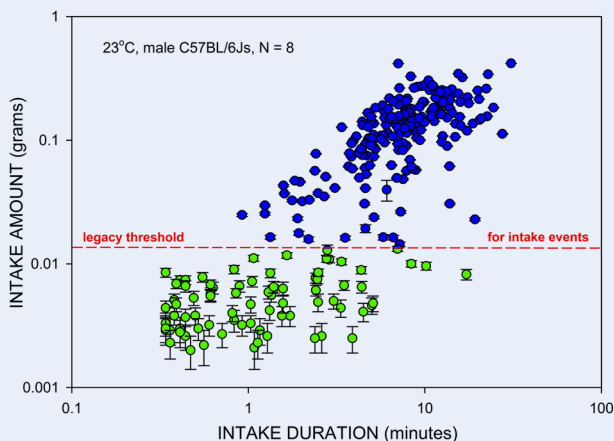
### Slow, Blurred Response



**Competitors' continuous systems** limit your research capabilities by using old, low resolution technology. The graph above shows broad peaks and no baseline. Therefore, the energy expenditure values are inaccurate.

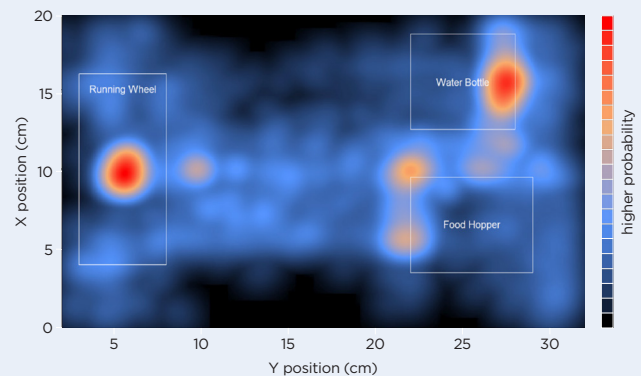
### Intake Events

Promethion detects and quantifies micro-intake events invisible to other systems; these events can constitute up to 30% of all intake behavior.



### Position Probability Heat Map

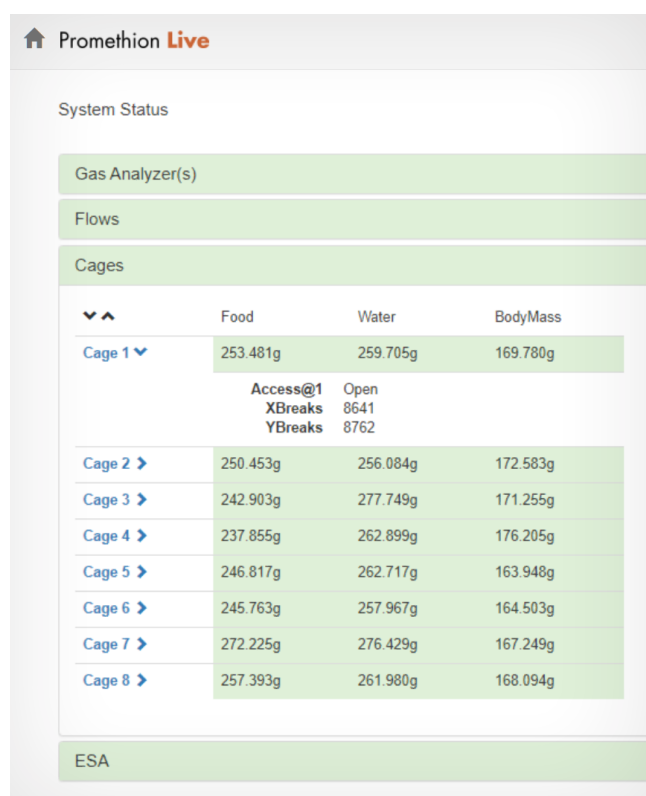
Position probability map of a single mouse over several days of data collection. Map produced in R Studio from Promethion Core data.



# Real-Time Monitoring & Analysis

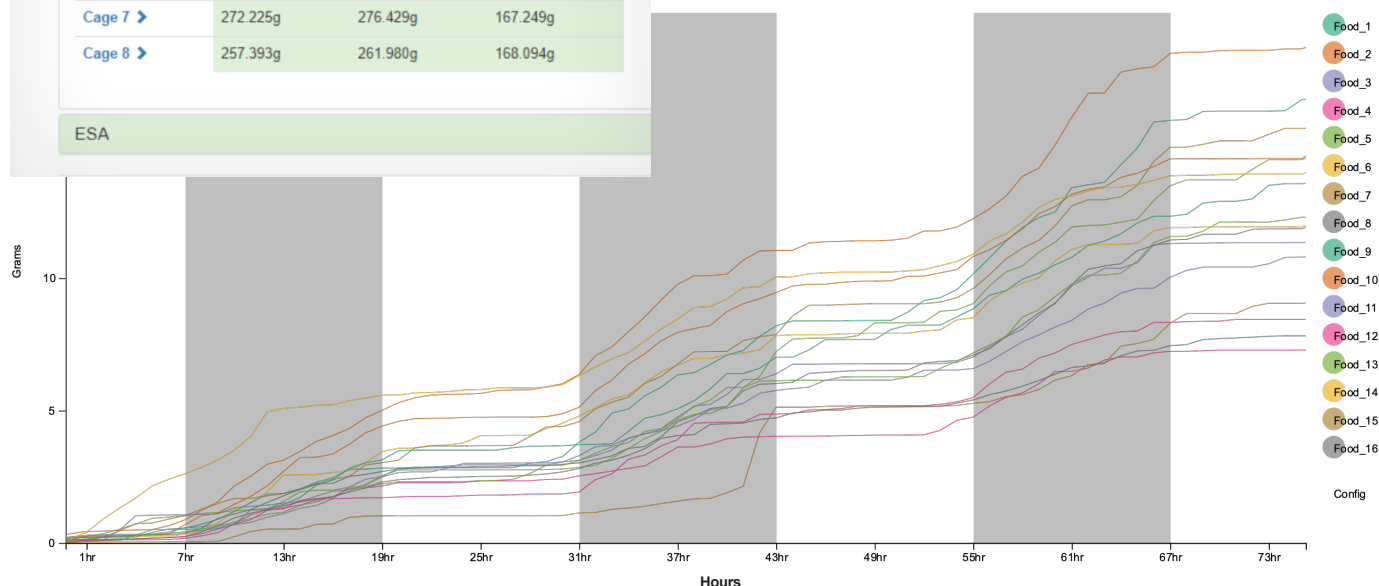
## Setup with Confidence

The Promethion Live™ software platform maximizes experiment success by verifying system performance and simplifying experiment setup. One-step gas calibration ensures accurate respirometry measurements. User selectable configuration options are system specific. Status indicators of vital components verifies system performance. Routine experiment configurations are simply saved and reused. Smart setup delivers reliable experiments so that you can proceed with confidence.

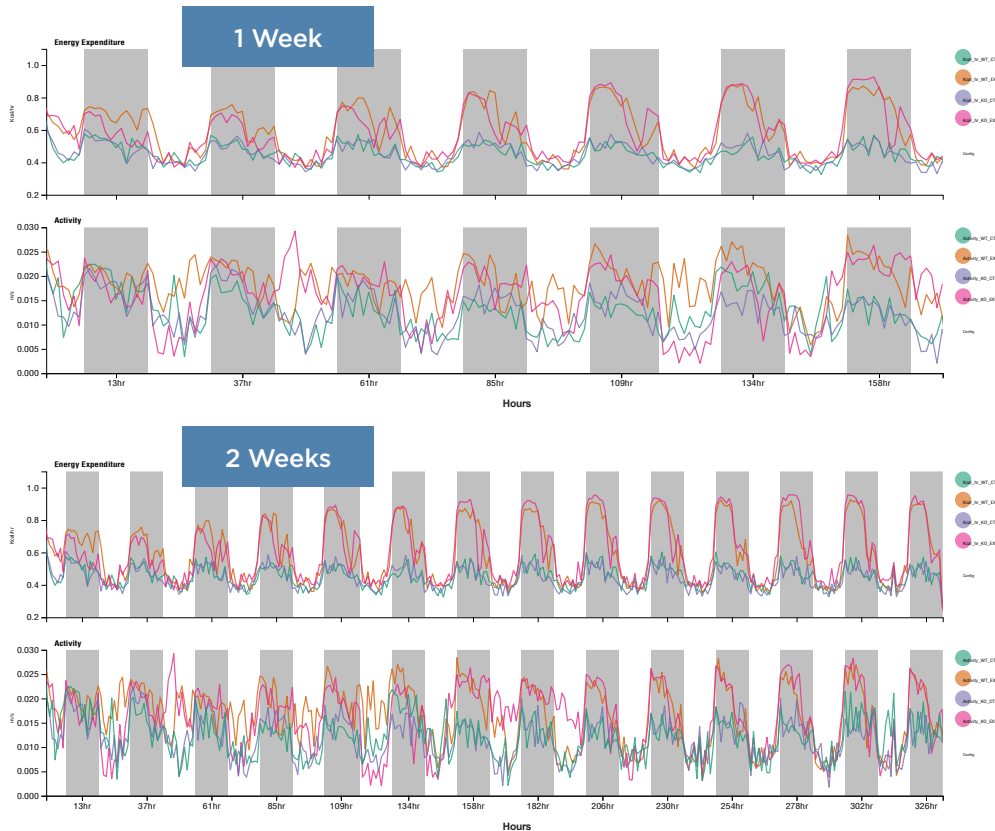


## Actionable Intelligence

Promethion Live empowers you with real-time animal and system information needed to make key decisions at any time and any place. You'll always know the health and welfare of each animal. By monitoring activity, ingestive behavior and weight change, you will know when to make adjustments. You have total control over your experiment through continual monitoring of all system components.







## Real Time Experiment Evaluation

Now you can explore comparative trends during an experiment looking at every facet measured, such as running activity, food consumption, or energy expended (data shown). The experiment result is no longer a black box to be opened at the end. Promethion Live provides the mean or median of grouped data for statistical comparison in real time. The data may be presented in real time or extracted for further evaluation.



# Metabolic Phenotyping Cage

Promethion Core systems are available in 8-16 cage configurations, with the ability to connect multiple systems for larger studies.

## Exercise Research

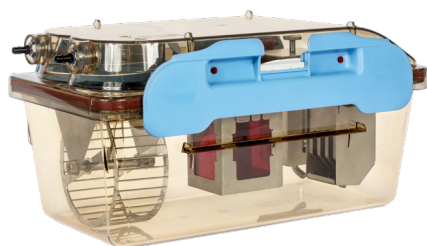
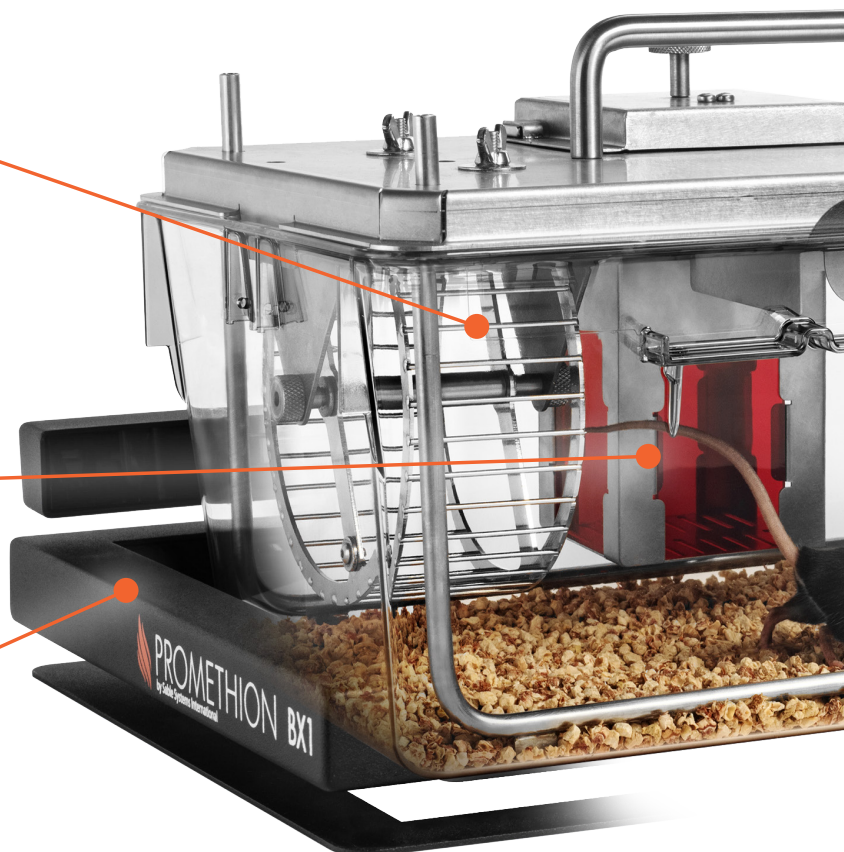
The **Running Wheel Module** measures mouse running distance and speed. You can correlate running with metabolic measurements, including accurate active energy expenditure, and integrate running behavior into total behavior assessment.

## Weight Assessment

The **Body Weight Monitor** measures weight changes in response to experiment or time.

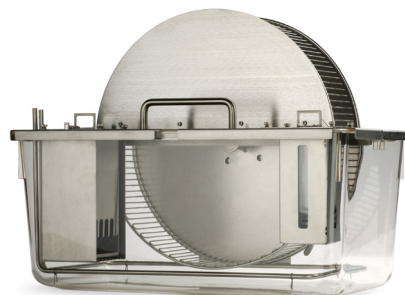
## Activity Monitoring

Promethion **Beam Break Activity Monitor** enables second by second analysis of total activity. This monitor can easily be used stand alone, or synchronized with metabolic measurement and other elements of the Promethion system.



## Gnotobiotic or Microbiome Research

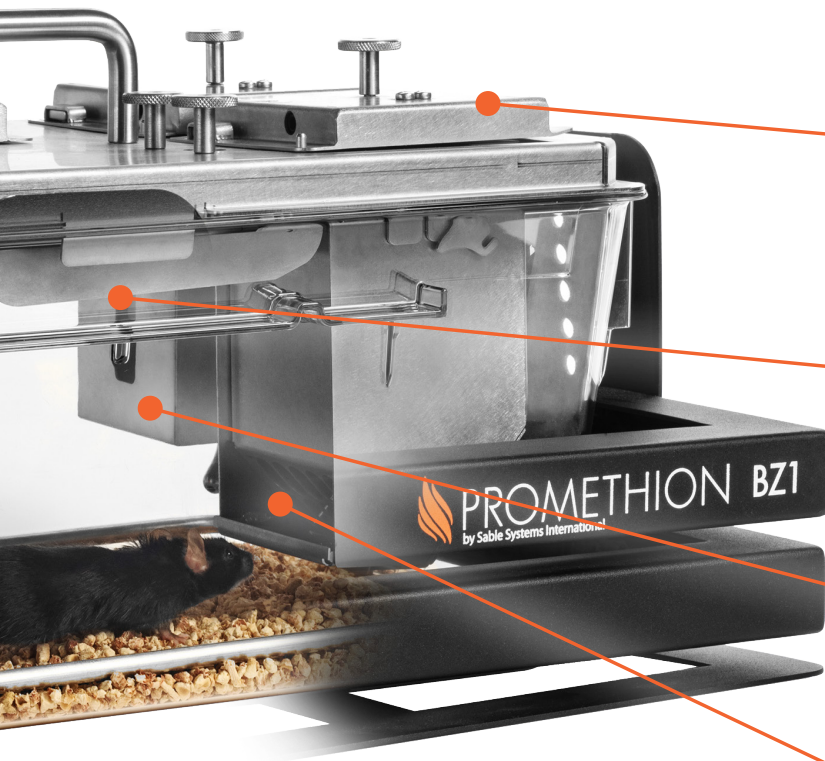
The **Bioexclusion and Biocontainment Mouse Cage** is used for gnotobiotic or microbiome studies and includes 2-way HEPA filtration.



## Rat Research

The **Rat Cage** has all the features and performance benefits of the standard mouse metabolic cage.





## Fully Configured Respirometry Cage for Mice

### Food and Water Handling

**Magnetic Mounts** simplify cage maintenance and workflow. They allow for quick swapping of the food, water and body mass measurement modules.

### Ingestive Behavior Studies

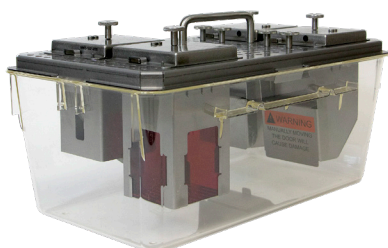
The **Access Control Door** added to the food module enables caloric restriction, paired, and yoked feeding studies.

### Water Intake Assessment

The **Water Intake Module** measures real-time liquid intake and allows you to conduct preference studies.

### Food Intake Assessment

The **Food Intake Module** measures real-time food intake and allows you to conduct preference studies.



## Ingestive Behavior Research

The **Dual Access Mouse Cage** is designed for liquid or food preference studies and food access control studies.



## Rat Ingestive Behavior Research

The **Group-House Rat Cage** measures intake events of individual rats. Designed for studies of liquid or food preference, and food access control.

## Promethion Core CGF

Promethion Core's Combined Gas & Flow (CGF) unit is a single organized housing that contains modular hot-swappable gas analyzers, flow regulators, pumps, onboard computer, and the Promethion Live software platform. This single integrated unit minimizes footprint and reduces clutter from tubing and cords.



## Promethion Core Options

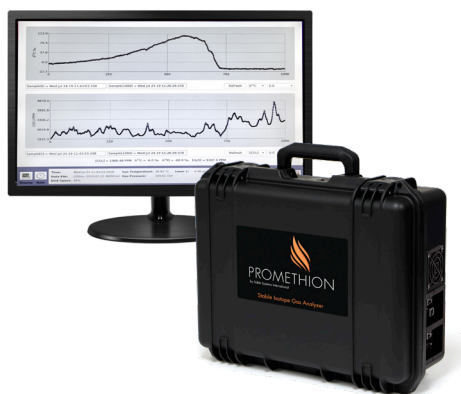
### Environmental Control Cabinet

Perform temperature or light experiments on up to 16 animals in a single environmental cabinet specifically designed for rodent phenotyping studies.



### Stable Isotope Gas Analyzer

Study specific nutrient utilization by measuring  $^{13}\text{C}$  or  $^{18}\text{O}$  isotopes in exhaled breath.



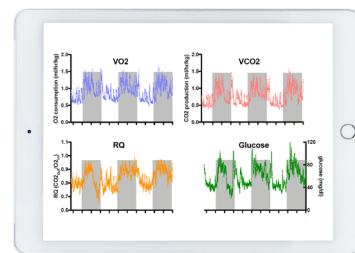
### Environmental Sensor Array (ESA)

Completely understand the environment. The ESA measures sound, humidity, temperature, light, room occupancy, and barometric pressure.



### Telemetry

Extend your research. Promethion Core couples with telemetry systems. Only Promethion Core has the resolution that enables correlation of metabolism data with the rapid signals produced by continuous glucose monitoring, pictured.



By Scientists, for Scientists



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