Promethion Live Software Platform

Real-Time Monitoring & Visualization of Metabolic and Behavioral Studies

The innovative Promethion Live software platform allows you to easily set up your Promethion Core metabolic and behavioral studies for data acquisition, real-time study monitoring with cohort analysis, graphical visualization of results, error detection, and data export. Study data is always available for monitoring system performance, animal welfare and data quality—allowing for early error identification and modification. Promethion Live even lets you enter animal specific information, providing visualization of cohort specific data for any time interval including mean, median and standard deviation. The software is easy to use with re-usable templates and configurations, as well as one-click calibration. Data export can be set up for any time range within the study and output in CSV data or SVG graphic formats. All raw and calculated study data is recorded for transparency and traceability.

Promethion Live software provides control and recording of Promethion/Promethion Core components and/or peripheral devices, including:

- Flow Generators
- Gas Analyzers
- Cage Sensors
- Environmental Sensors
- Group-Housed Caging Systems
- Stable Isotope Analyzer
- Metabolic Treadmill
- Methane Analyzer

FEATURES

Live access to study and animal information to allow real-time decision making

Intuitive setup screen simplifies input of all cage and device parameters, including animal specific information

Real time experiment monitoring of mouse metabolic treadmill

Access to fully transparent and traceable raw data, for evaluation and reanalysis if needed

Continuous monitoring of system performance, animal welfare and data quality

Flexible real-time analysis and visualization of grouped data

System and experiment configuration templates simplify study setup while enhancing consistency and quality control

One-click calibration reduces calibration time

Data export to CSV files or SVG graphs for simplified analysis and presentation of study results

Secure remote access from any device – access data whenever and wherever you want

PROMETHION™   PROMETHION CORE™

SABLE SYSTEMS INTERNATIONAL

Promethion Live Software Platform

Set Up and Start an Experiment Within Minutes

The intuitive user interface allows fast setup of your study. Metabolic cage or treadmill may be selected and configured. Configurations can be stored and re-used, further saving time. New configurations can quickly be built by modifying existing ones. The software even includes one-button calibration.
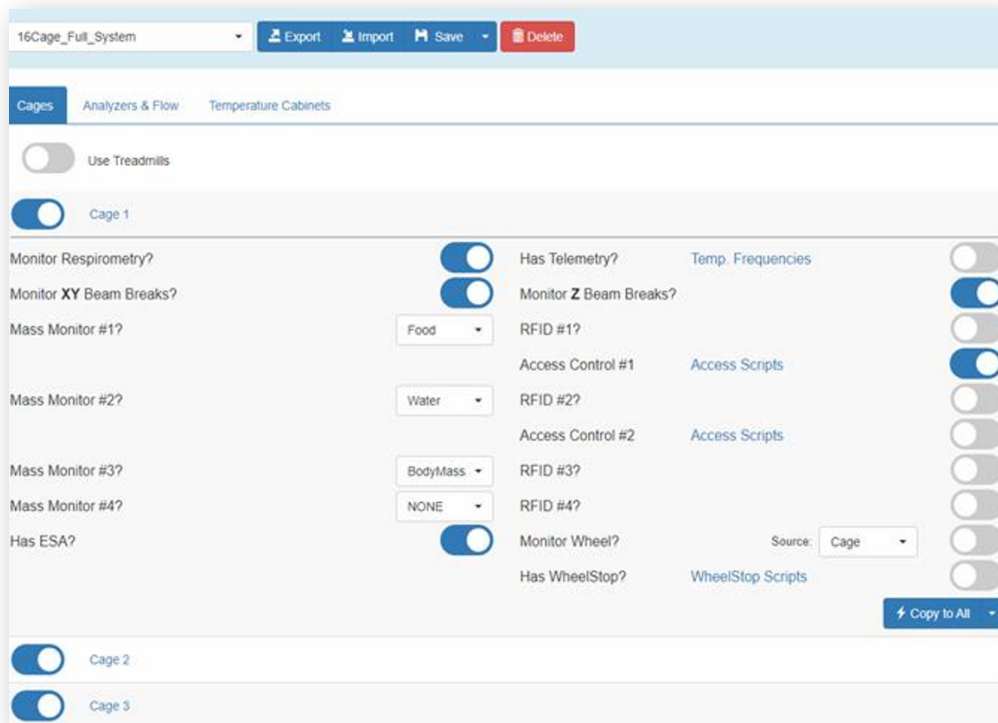
Evaluate System Status at a Glance

Promethion Live Software continually monitors all cages and informs the user when a parameter is outside an acceptable range. This allows real-time error identification and handling during an experiment. With the remote access capability, monitoring can be done from virtually anywhere 24 hours a day.

The System Status screen uses color coding to highlight the source of potential system errors.

Clicking on the error source provides specific details, such as cage components. The system can even identify when food and water containers need refilling.

Promethion Live Software Platform

Monitor Animal Welfare 24/7

Promethion Live software provides viewing of individual animal data, providing caretakers with "at-a-glance" verification of drinking, eating and activity. These individualized views can be for any parameter measured.

Any data from the system can be pulled into a template and saved for use by any caretaker.
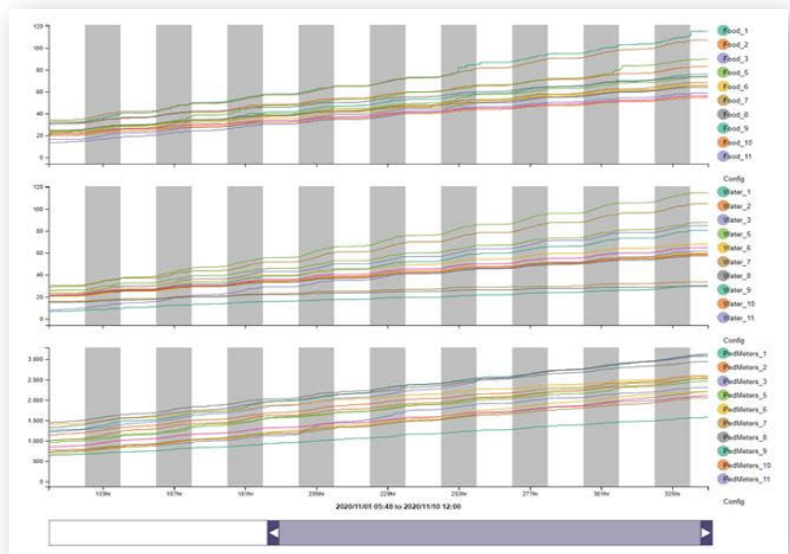
Real-time Analysis of Live Data

Promethion Live makes the analysis and evaluation of complex metabolic data easy. Select individual animals and parameters to compare or define groups of animals for direct visualization of cohort-specific differences. Real-time recordings can be viewed while an experiment is in progress or downloaded directly as a .csv file once a recording is complete. Temporal resolution can also be adjusted maximizing flexibility with short and long-term studies. Patterns of activity that correlate with circadian cycles (i.e. lights on/off) are readily detectable with the gray and white columns in the graphical display. Editable templates and configurations allow for creating and saving specific reports for different user groups.
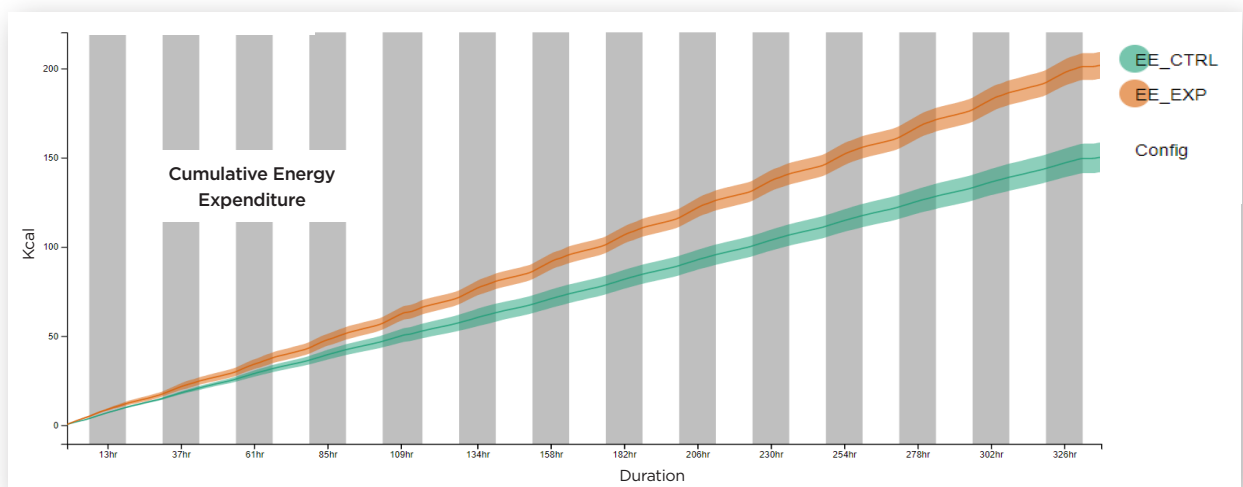
For scientific evaluation, animals can be grouped with the data displayed as mean or median and with standard deviation or standard error. Data can be binned in any interval and can be exported in CSV data or SVG (graphics) formats.

High Content Metabolic Phenotyping

Promethion Live integrates multiparameter metabolic and behavioral phenotyping data for comprehensive evaluation. This includes data from our Stable Isotope Analyzer and our new Methane Analyzer. These high-resolution metabolic and behavioral data are synchronized with each other enabling correlative studies. For an even deeper understanding of the experiment, these data may also be synchronized with other analytical modalities such as telemetry-based body temperature measurements or continuous glucose monitoring measurements.


Export Data

You can export your data in CSV format for statistical or visualization analysis by 3rd party software applications as well as to combine with other data streams, e.g. telemetry (right). The chart below was prepared using R (Copyright © 2020 The R Foundation for Statistical Computing). R scripts are available from Sable Customer Support.
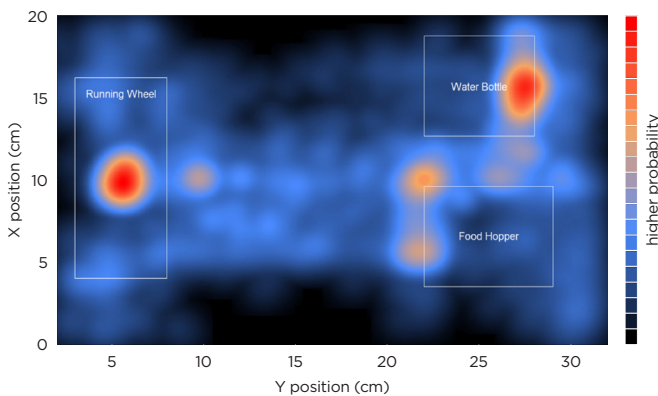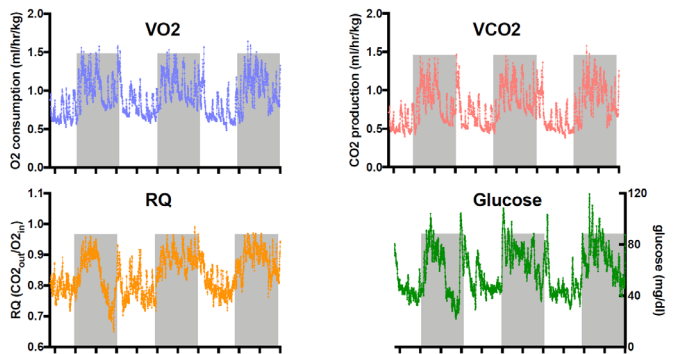

Treadmill Experiment Monitoring

Real-time VCO_2, VO_2, EE, RER, Speed and Incline shown for a single mouse as recorded by a Promethion Core system connected to the Mouse Metabolic Treadmill.
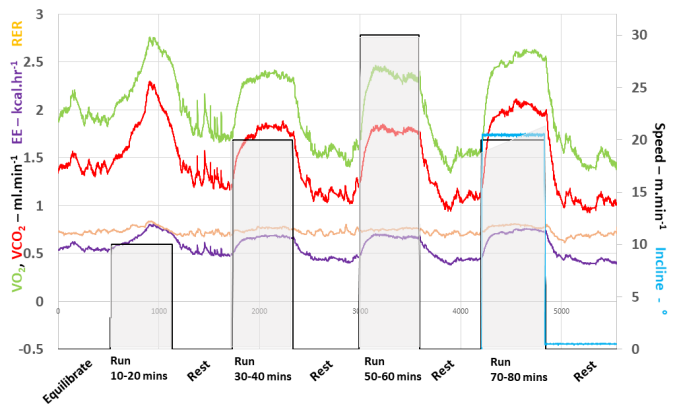
Only Promethion Core generates the high-resolution data streams that can be synchronized with optogenetic or telemetry data streams such as from continuous glucose monitoring (shown below).