

OxyletPro™ System

Innovative Metabolic Monitoring

Modular Design

Maximum Flexibility

Optimal Results

The OxyletPro™ System

Innovative Metabolic Monitoring

OxyletPro is a modular system integrating:

- **Respiratory metabolism**
(VO₂ consumption/VCO₂ production)
- **Food and drink intake**
- **Activity/rearing measurements**

OxyletPro, an optimized system for studies in laboratory research models, utilizes indirect calorimetry to evaluate respiratory metabolism.

Food and drink intake and activity are evaluated using Panlab's weight transducer technology. This highly stable technology permits the continuous assessment of consumption and spontaneous activity with superior accuracy. For a more comprehensive evaluation of activity, an Infrared (IR) frame can be added to monitor rearing behavior.

OxyletPro's unique modular design allows for simple expandability. Start with the configuration that meets your requirements today, and expand as needs change and grow.

Special configurations are available for calorimetry studies with neonatal rat pups as well as exercise physiology studies with our single lane, airtight treadmills.

OxyletPro can be used in the following applications: obesity, diabetes, metabolic disorders, nutrition studies, chronobiology/circadian rhythm studies, drug screening, phenotyping and more!



Modular Design • Maximum Flexibility • Optimal Results

Modular Physiocage Setup

Key Features

- Home cage advantage, minimizing stress to the subjects
- Easily expanded and upgraded as needs grow and change
- Optimized performance with minimal calibration and maintenance
- Unmatched versatility with small footprint; adaptable system for mice and rat models
- Special configurations for neonate testing and treadmill experiments
- Highly accurate monitoring of food and drink consumption; combining our specially designed dispensers with our weight transducer technology

Indirect Calorimetry

OxyletPro uses a standard **rodent home cage** ① and uses an **airtight lid** ② to ensure the integrity of the sample environment. Simply change from a mouse lid to a rat lid - that is how easy it is to adapt the system for both species.

The home cages are autoclavable, making cleaning easy.

The **air supply and switching unit** ③ allows for independent flow control to each connected cage and sends the cage samples in tandem to the **gas analyzer** ④ for O₂ and CO₂ concentration analysis. Since the flow is independently controlled for each cage, the system has the flexibility to conduct simultaneous experiments of subjects of varying species and/or size, making OxyletPro extremely efficient.

Our **gas analyzer** ④ features a high quality laser diode O₂ sensor and Infrared spectroscopy CO₂ sensor, allowing 0.01% resolution.

We offer special configurations for neonatal rats and our single lane airtight treadmills.

Food and Drink Intake

Opt for our airtight lids with **transducers** ⑤ to add on food and drink intake monitoring! High precision extensometric weight transducers are integrated into our airtight lid design and feature easy to access **food** ⑥ and **drink dispensers**. ⑦ This extremely stable technology allows intake monitoring with the highest possible accuracy (0.02 g for food and 0.01 g for liquid).

Activity and Rearing

Add on the **sensor platform**, ⑧ which houses a third extensometric weight transducer and continuously record spontaneous activity to clearly identify circadian patterns and activity levels. This highly precise capability will allow you to detect activity without displacement; even the finest movements by mice are detected.

For additional activity monitoring, our **IR sensor bars** ⑨ are added to detect occurrence and duration of rearing events.



OxyletPro Gas Analyzer



OxyletPro Rodent Home Cage & Sensor Platform



OxyletPro Air Supply & Switching Unit

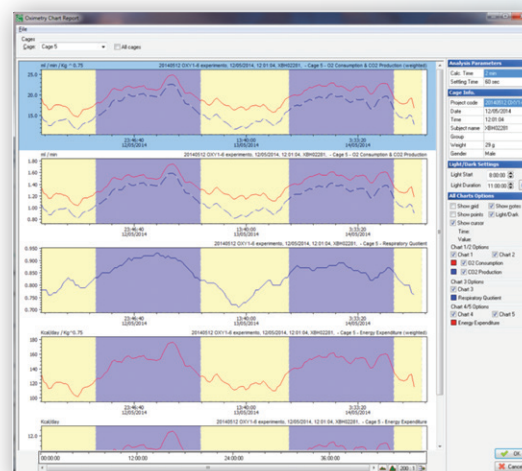
Metabolism Software

Modular software package for a modular system

Metabolism offers software modules for respiratory metabolism (METAOXY), intake (METAINT), and activity (METACT) to complement our OxyletPro modular hardware. The NEW user interface features an Experiment Assistant which simplifies and expedites the setup and an Advanced Scheduler Tool for organizing and managing OxyletPro experiments. The Data analysis enhancements include runtime viewers and charts for real time monitoring, batch analysis and an option for data averaging.

Now with an improved, 1-minute switching time, OxyletPro and Metabolism provides greater resolution for the following parameters for each user-defined time interval:

- VO_2/VCO_2 concentration
- VO_2/VCO_2 consumption
- Air flow rate
- Respiratory Quotient (VO_2/VCO_2)
- Energy expenditure
- Treadmill data (if applicable)
- Food and drink consumption
- Mean spontaneous activity
- Rearing data



Specifications

Oxygen Sensor	
Technology	Laser diode absorption
Measurement Range	2 - 100%
Resolution	0.01%
Linearity	±0.2%
Noise	±0.03% (20 ms average)
Accuracy	±0.2% (24 hours)
Carbon Dioxide Sensor	
Technology	Infrared spectroscopy
Measurement Range	0 - 10%
Resolution	0.01%
Accuracy	< 0.3% absolute of reading <5% CO_2 ; < 10% of reading between 5 - 10% CO_2
Gas Analyzer	
Gas Analyzer Dimensions	260 x 330 x 120 mm (W x D x H)
Gas Analyzer Output	RS232 (RS232 to USB adapter supplied)
Air Flow and Switching Unit	
Standard Unit Air Flow	0.2 to 2.5 l/min per cage
Neonate Unit Air Flow	0 to 2 l/min
Switching Cycle	Cycle between 2-4 chambers in interval from 1 to 99 min
Flow Adjustment	Independent regulator for each cage
Sensor Platform	
Intake Amplifier Resolution	20 mg for food and drink
Intake Amplifier Drift	<0.1 mg/day

Ordering Information

Order No.	Product
Home Cage	
76-0800	Oxylet Pro Home Cage, Requires Lid
Airtight Lid Options	
76-0801	Oxylet Pro Airtight Lid, Rat
76-0802	Oxylet Pro Airtight Lid, Mouse
76-0804	Oxylet Pro Airtight Lid, No Intake Monitoring, Rat
76-0805	Oxylet Pro Airtight Lid, No Intake Monitoring, Mouse
Home Cage Floor Options	
76-0806	Grid Floor, Rat
76-0807	Grid Floor, Mouse
76-0808	Plastic Floor, Rat
76-0809	Plastic Floor, Mouse
Indirect Calorimetry Hardware	
76-0810	O_2/CO_2 Analyzer
76-0811	Air Supply and Switching Unit, up to 2 Chambers
76-0812	Air Supply and Switching Unit, up to 4 Chambers
Intake Hardware	
76-0821	Drink Dispenser with Bottle, Rat
76-0814	Drink Dispenser with Bottle, Mouse
76-0822	Food Dispenser, Rat
76-0815	Food Dispenser, Mouse
Activity Hardware	
76-0813	Activity Platform
76-0816	Rearing Monitoring IR Frames
Software	
76-0817	Metabolism V3.0 Platform
76-0818	Indirect Calorimetry Software Module
76-0819	Intake Software Module
76-0820	Activity Software Module

For more information on the OxyletPro System, or any of Panlab's quality products, please visit us at www.panlab.com