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OxyletPro System - Physiocage (Panlab)

Flexible system for the evaluation of respiratory metabolism, food and drink intake and activity in rodents.

- 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 configuration treadmill experiments
- Highly accurate monitoring of food and drink consumption; combining our specially designed dispensers with our weight transducer technology

Item No.	Description
76-0800	CAGE Home Cage (requires lid)
76-0802	CAGE Airtight Lid, Mouse
76-0801	CAGE Airtight Lid, Rat
76-0805	CAGE Airtight Lid, No Intake Monitoring, Mouse
76-0804	CAGE Airtight Lid, No Intake Monitoring, Rat
76-0807	CAGE Grid Floor Mouse
76-0806	CAGE Grid Floor Rat
76-0809	CAGE Plastic Floor Mouse
76-0808	CAGE Plastic Floor Rat
76-1386	Oximetry Interfaces Bundle (Up to 2 Chambers)
76-1387	Oximetry Interfaces Bundle (Up to 4 Chambers)

Item No.	Description
76-1388	Oximetry Interfaces Bundle (Up to 8 Chambers)
76-1389	Oximetry Interfaces Bundle (Up to 12 Chambers)
76-1390	Oximetry Interfaces Bundle (Up to 16 Chambers)
76-1391	Oximetry Interfaces Bundle (Up to 20 Chambers)
76-1392	Oximetry Interfaces Bundle (Up to 24 Chambers)
76-1393	Oximetry Interfaces Bundle (Up to 28 Chambers)
76-1394	Oximetry Interfaces Bundle (Up to 32 Chambers)
76-1403	Oximetry Filter Kit (Up to 8 Chambers)
76-1404	Oximetry Filter Kit (Up to 16 Chambers)
76-1405	Oximetry Filter Kit (Up to 24 Chambers)
76-1406	Oximetry Filter Kit (Up to 32 Chambers)
76-0813	INTAKE, ACTIVITY & REARING platform
76-0815	INTAKE Food Dispenser Mouse
76-0814	INTAKE Drink Dispenser with Bottle Mouse
76-0822	INTAKE Food Dispenser Rat
76-0821	INTAKE Drink Dispenser with Bottle Rat
76-0816	ACTIVITY & REARING IR Frame for Rearing Detection
76-0817	METABOLISM Software - V3.0 Platform

Item No.	Description
76-0818	METABOLISM Software METAOXY Experimental Module - Calorimetry (respiratory metabolism).
76-0819	METABOLISM Software METAINT Experimental Module - Food and Drink Intake
76-0820	METABOLISM Software METAACT Experimental Module - Activity and Rearing

DETAILS

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 Panlabâ€™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.

OxyletProâ€™s unique modular design allows for simple expandability. Start with the configuration that meets your requirements today, and expands 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!

Indirect Calorimetry

OxyletPro uses a standard rodent home cage and uses an airtight lid 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 allows for independent flow control to each connected cage and sends the cage samples in tandem to the gas analyzer 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 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 to add on food and drink intake monitoring! High precision extensiometric weight transducers are integrated into our airtight lid design and feature easy to access food and drink dispensers.

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, which houses a third extensiometric 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 are added to detect occurrence and duration of rearing events.

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:

- VO2/VCO2 concentration
- VO2/VCO2 consumption
- Air flow rate
- Respiratory Quotient (VO2/VCO2)
- Energy expenditure
- Treadmill data (if applicable)
- Food and drink consumption
- Mean spontaneous activity
- Rearing data

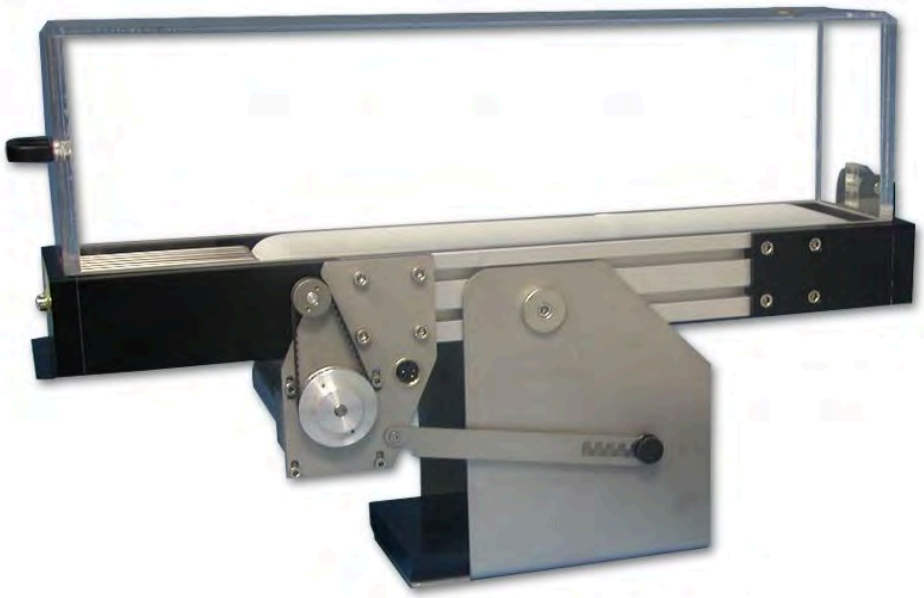
NOTE: the calibration tanks are not provided with the system and should be purchased separately by the user (see specifications below).

OxyletPro System - Treadmill (Panlab)

Complete solution for assessing respiratory metabolism in treadmill studies using the indirect calorimetry method.

- New touchcsreen treadmill unit
- Rolling belts with adjustable speed and slope
- Minimum maintenance required
- Easy to clean
- High performance motor
- Silent operation, even at high regimes
- Accurate control of the intensity of the shock delivered
- Positive and negative slope (-25 to +25 degrees)
- Indirect calorimetry measurement for VOmax determination

Item No.	Description
76-0897	Single Lane OxyletPro Touchscreen Treadmill, Rats
76-0891	Single Lane Touchscreen Treadmill, Mice
76-0678	Lid for Metabolism, Mouse (to be used in conjunction with 76-0891)
76-1386	Oximetry Interfaces Bundle (Up to 2 Chambers)
76-1387	Oximetry Interfaces Bundle (Up to 4 Chambers)
76-1403	Oximetry Filter Kit (Up to 8 Chambers)
76-1397	METABOLISM Software OXY Bundle



DETAILS

The OxyletPro system is a modular system allowing the integration of respiratory metabolism (O2 consumption /CO2 production). Panlab provides a complete Oxylet solution enabling forced exercise training in a treadmill combined with indirect calorimetry in rodents.

Basically, Panlab Treadmill apparatus consists of a rolling belt with adjustable speed (up to 150 cm/s) and slope (from -25 to 25 degrees) and a control Unit. The rolling belt is built with especially selected materials to guarantee the best performance under conditions of intensive use and the minimum operations of maintenance, as well as simplicity in keeping it clean. The lanes (corridors of activity for the animal) have sufficient width for the subject to correct its errors in coordination, thereby allowing an exact measurement of the fatigue without deficiencies in motor coordination.

The treadmill unit controls the speed of the belt, shows measured data in its touchscreen display and provides electrical shock to the grid. The electrical shock supplied by the grid is of constant intensity (from 0 to 2 mA), that is, the current which circulates through the animal (and therefore its effect) only depends on the value of the mA chosen and not of the subject (quantity of body mass in contact with the bars, perspiration, etc.)

For metabolism studies, the treadmill is provided with an air isolated enclosure. The air flow control

unit allows a fine regulation of the air flow inside the treadmill and sends the air to the gas analyzer for O2/CO2 gas concentrations determination. The air melange is previously stabilized through the air reservoir.

The associated METABOLISM software transfers the data from the treadmill control unit and the gas analyzer to a PC computer using RS232/USB outputs for data storage and further analysis.

NOTE: the calibration tanks are not provided with the system and should be purchased separately by the user (see Specifications).

SPECIFICATIONS

Specifications	76-0891
Model	LE8708TS
Subjects	One (1) Mouse
Speed cm (inch)	5 to 150 (2 to 59)
Exercise Area cm (inch)	38 x 5 x 5 (15 x 2 x 2)
Control Unit Dimensions cm (inch)	23 x 29.5 x 11 (9 x 11.6 x 4.3)
Treadmill Dimensions (without lid) cm (inch)	44 x 15 x 23 (17 x 6 x 9)
Supporting Base /Foot Surface cm (inch)	22 x 13 (9 x 5)
Options	76-0554 Standard Lid, 76-0678 OxyletPro Lid, 76-0921 Air Puff

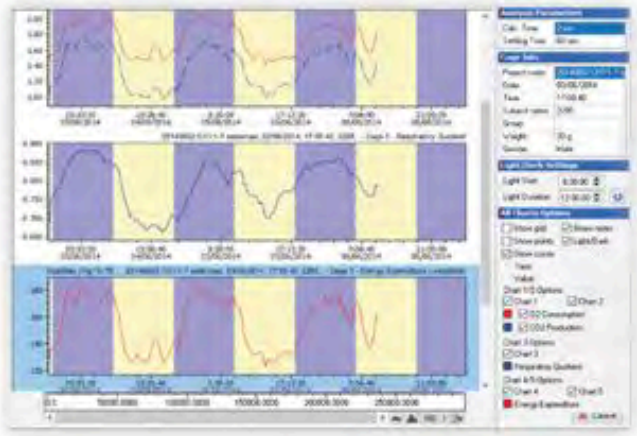
OxyletPro System – Waste Collection (Panlab)

A more holistic approach to understand the animal body mass phenotype by combining the assessment of respiratory metabolism with digestive efficiency through the analysis of collected urine and feces.

- Fully validated technology for waste collection (Tecniplast)
- Special smooth floor and resting tube for minimizing stress
- Easy cleaning (Polycarbonate, stainless-steel material)

Item No.	Description
76-1360	OxyletPro Waste Collection Chamber Bundle, Mouse
76-1386	Oximetry Interfaces Bundle (Up to 2 Chambers)
76-1387	Oximetry Interfaces Bundle (Up to 4 Chambers)
76-1388	Oximetry Interfaces Bundle (Up to 8 Chambers)
76-1389	Oximetry Interfaces Bundle (Up to 12 Chambers)
76-1390	Oximetry Interfaces Bundle (Up to 16 Chambers)
76-1391	Oximetry Interfaces Bundle (Up to 20 Chambers)
76-1392	Oximetry Interfaces Bundle (Up to 24 Chambers)
76-1393	Oximetry Interfaces Bundle (Up to 28 Chambers)
76-1394	Oximetry Interfaces Bundle (Up to 32 Chambers)
76-1403	Oximetry Filter Kit (Up to 8 Chambers)

Item No.	Description
76-1404	Oximetry Filter Kit (Up to 16 Chambers)
76-1405	Oximetry Filter Kit (Up to 24 Chambers)
76-1406	Oximetry Filter Kit (Up to 32 Chambers)
76-1397	METABOLISM Software OXY Bundle
76-1361	Activity Bundle for 1 Waste Collection Cage
76-1132	SEDACOM Software Accessory – RS232/USB-HS Adapter



DETAILS

Panlab features the new OxyletPro waste collection cage for mice. A more comprehensive approach to understanding the animal body mass phenotype by combining the assessment of respiratory metabolism with digestive efficiency through the analysis of collected urine and feces.

The OxyletPro waste collection configuration features:

- Top-level home cage section including refillable food and drink dispensers as well as a smooth grid floor and resting tube accessories for ensuring maximum animal comfort and minimize stress
- Low-level waste collection section with separating cone, collections funnel, urine ring and removable sampling tubes.
- Stainless-steel supporting stand for the chamber set up and optional chiller accessory
- IR bars set, activity logger and SEDACOM software for global activity and rearing assessment (optional).
- Compatible with Panlab indirect calorimetry control units, accessories, and software: gas analyser, air flow and switching unit, reference air chamber and METABOLISM software
- DSI implantable accessories for additional physiological data (optional)

Key Features:

- Fully validated technology for waste collection (Tecniplast)
- Special smooth floor and resting tube for minimizing stress
- Easy cleaning (Polycarbonate, stainless-steel material)
- Compatible with telemetry

OxyletPro's full modular design allows for simple expandability. Configurations are available for home cage metabolism phenotyping with our Physiocage system and for cardiovascular studies with exercise physiology with our airtight treadmills.

Start with the configuration that meets your requirements today and expand as needs change and grow!

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

ActiTrack Software (Panlab)

Actitrack software controls the Panlab Infrared actimeter for the evaluation of activity and rearing.

- Control up to 32 frames
- Provides integrated data (spatial position, pattern of displacement, rearings)
- User-adjustable thresholds for classifying activity into fast, slow and resting movements
- Allows track re-analysis with an unlimited number of user-defined zones
- Enables re-playing experiment using different threshold for movement speed definition
- Can be installed in as many computers as may be required for track analyses

Item No.	Description
76-0003	(ACTITRACK V2.7) Software for Global activity, Tracking and Rearing (Up to 32 Frames), includes 1 RS232/USB converter
76-0443	Software module for GLP
76-0610	Upgrade from previous version to ACTITRACK V2.7

DETAILS

The ActiTrack software is activity counting and tracking software working with Panlab IR actimeters (up to 32 IR frames). It discriminates and analyses frequency and number of IR beam breaks to convert it in a track file that can be analysed later for generating reports. Thus ActiTrack provides much more integrated and precise data in terms of animal activity, position, displacements and rearings than those provided by the SeDaCom software.

The IR actimeter enclosure can be divided into zones of interest (up to 32) using the specific tools provided by Actitrack. Animal trajectories are acquired from real time beam breaks and stored enabling the user to analyze and re-analyse experiments with different zone configurations, associations (user-defined combination of zones) and parameters. Track can be replayed in real-time or by using an "accelerated" (user-defined speed) or "instantaneous" modes. The report cover either the full track or partial sections of time.

All data obtained by Actitrack is expressed in ASCII format and can be easily exported to a wide range of spreadsheets and statistics programs for further analysis. Actitrack can be installed in as many computers as required, and the user will be able to check data, generate reports, print out results and obtain charts for visual presentation.

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