

Foodrink System

Food & Drink Consumption, Activity, Rearing

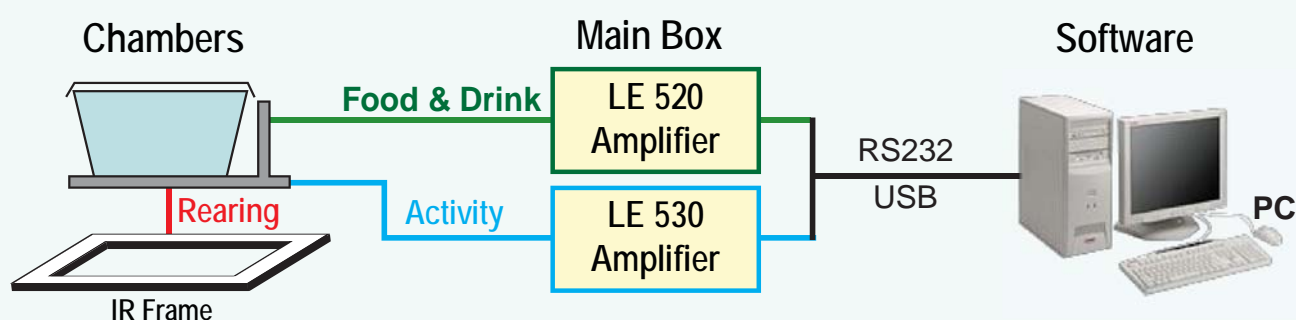
LF0830A

Panlab proposes a new system recording food and drink consumption using the newly special weight transducer technology for higher accuracy and stability of the measurements.

The Panlab FOODRINK System allows the continuous assessment of the animal food and drink consumption and can be easily expandable to the evaluation of animal spontaneous activity and rearing.

The complete FOODRINK System is composed by the following components:

- 1 to 32 Experimental Chambers
- Signal amplifiers + Main box
- IR Frame (option)
- METABOLISM Software
- Computer

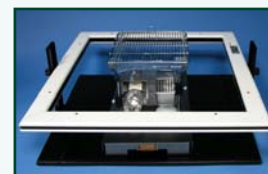


Experimental Chambers

The Chambers are standard home cages prepared for the measurement of food & drink intake and activity. The cages are fitted with food and drink dispensers installed on weight transducers allowing a continuous recording of the animal food and drink consumption for up to 100h. The outstanding EXTERNAL position of dispensers avoids any influence on the living space of the subject as well as unwanted artefacts. The system registers the absorbed food and its wastage from the feeder. The liquid dispenser is associated with a hanging drop allowing the collection of the wasted liquid. The chambers can also work with double drinking or feeding.



MFD Mouse



MFD Mouse + IR Frame

			Dimensions (cm)		
Animal	Reference	IR Frame	Cage	Base	with IR Frame
Mouse	MFD	LE 8845	20 x 26 x 14	23 x 40	60 x 54
Rat	RFD	LE 8845	26 x 46 x 15	30 x 50	60 x 54

Signal Amplifiers

The Food, drink and activity signals from the weight transducers are amplified using the Panlab LE 520 and LE 530 Amplifiers.

LE 520 double amplifier (INTAKE)



Amplifier with two input channels for the food and drink weight transducers. One Amplifier per Cage. It has two analogue outputs to view feeding behaviour on a PC by means of any data capture system.

LE 530 two-channels amplifier (ACTIVITY)

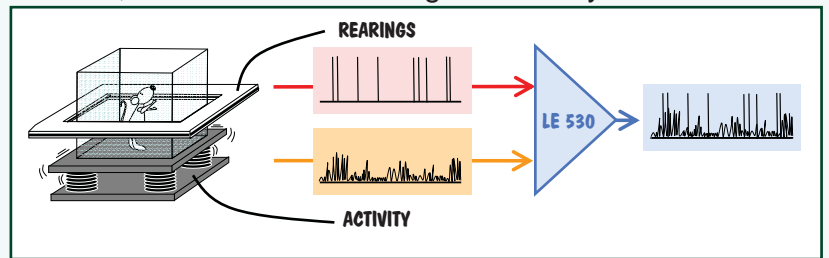


Two-channels amplifier to record locomotor activity and rearing. It controls two cages. It has analogue activity outputs for PC display by means of any data capture system.

Detection of motion activity is performed by a weight transducer that holds the bottom of the cage by 4 points. The movements produced by the animal are recorded continuously by the transducer and converted in to an electrical signal that adequately filtered and amplified (adjustable by the user), give precise and reliable results.

This technology provides an undisputable enhancement on the traditional method of motion activity measurement performed by means of infrared beams, since the information generated by the beams' cuts is discrete and leaves some dead space, while Panlab system gathers continuously the whole movement of the animal.

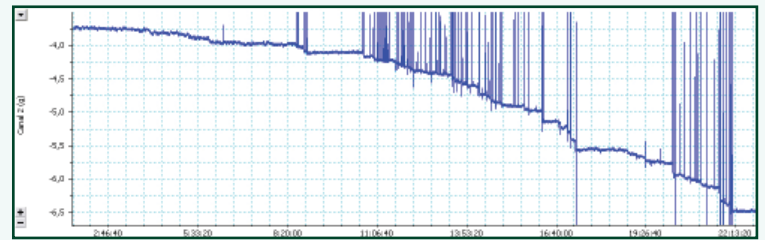
Rearing, instead, is detected by infrared beam cuts (IR) and, with the LE 530 Amplifier the signal is superimposed to the activity plot.



Amplifiers Features

- Resolution: 20mg (food & drink)
- Drift: < 0,1mg/day

All signals have analogic output and, since the records are in DC way, it is possible to test the fiability of the System: TRACEABILITY



Main Boxes

Devices for housing the LE 500 series Amplifiers. They have an RS 232 output with adaptation for USB.



LE 520-30
Capacity: 3 Amplifiers



LE 520-60
Capacity: 6 Amplifiers

Software Metabolism 2.0

METABOLISM 2.0 allows the extraction in digital form of the data obtained from the Panlab OXYLET, FOODRINK and PHYSIOCAGE systems for storage and calculation of important physiological parameters. A separate or combined evaluation of the respiration metabolism, food/drink intake, spontaneous activity and rearing is rendered possible by the use of this very basic and easy-to-use software. METABOLISM 2.0 can also import and convert analogical data from older equipment.

METABOLISM 2.0 consists of 3 different modules:

META-OX: Provides O₂/CO₂ metabolism parameters

- O₂ consumption
- CO₂ production
- Respiratory quotient
- Energetic exchange

META-INT: Provides Food & Drink intake parameters

- Food consumption by user-defined interval of time
- Drink consumption by user-defined interval of time

META-ACT: Provides Treadmill, Activity and Rearing parameters (depending of the configuration chosen).

- Treadmill speed (Treadmill)
- Distance travelled (Treadmill)
- Number of shock received (Treadmill)
- Mean activity by user-defined interval of time
- Number of rearing by user-defined interval of time

Time (hours)	Food (g)	Consumption (g)	Drink (ml)	Consumption (ml)
00:00:19	-0,12379	0	0,10200	0
00:30:19	-0,14517	0,02130	0,10200	0
01:00:19	-0,76507	0,64125	0,10200	0
01:30:19	-1,23886	1,11507	-0,006000000	0,13083
02:00:19	-1,5062	1,30251	-0,097750000	0,20063
02:30:19	-1,5063	1,30251	-0,097750000	0,20063
03:00:19	-1,69526	1,53547	-0,097750000	0,20063
03:30:19	-1,68194	1,58815	-0,097750000	0,20063
04:00:19	-2,15124	2,02749	-0,097750000	0,20063
04:30:19	-2,30921	2,10542	-0,14904	0,25272
05:00:19	-2,69856	2,53477	-0,14904	0,25272
05:30:19	-3,08645	2,96266	-0,14904	0,25272
06:00:19	-3,54446	3,42067	-0,14904	0,25272
06:30:19	-3,6528	3,52901	-0,14904	0,25272
07:00:19	-3,6528	3,52901	-0,14904	0,25272
07:30:19	-3,6528	3,52901	-0,14904	0,25272
08:00:19	-3,6528	3,52901	-0,14904	0,25272
08:30:19	-3,71809	3,5951	-0,14904	0,25272