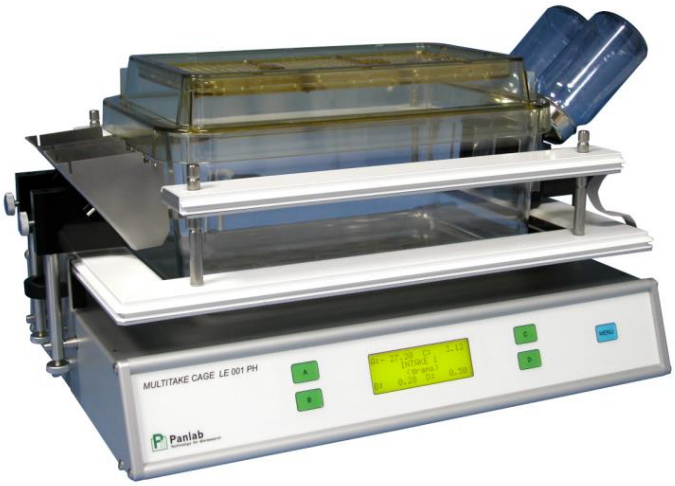
LE001 PH
MULTITAKE CAGE

V22/05/14
Firmware version 1.05



USER'S MANUAL

Panlab | HARVARD APPARATUS

1. SYMBOLS TABLE

Recognising the symbols used in the manual will help to understand their meaning:

DESCRIPTION	SYMBOL
Warning about operations that must not be done because they can damage the equipment	
Warning about operations that must be done, otherwise the user can be exposed to a hazard.	
Protection terminal ground connection.	
Warning about a hot surface which temperature may exceed 65ºC	
Warning about a metal surface that can supply electrical shock when it's touched.	
Decontamination of equipments prior to disposal at the end of their operative life	
Waste Electrical and Electronic Equipment Directive (WEEE)	

2. GOOD LABORATORY PRACTICE

Check all units periodically and after periods of storage to ensure they are still fit for purpose. Investigate all failures which may indicate a need for service or repair.

Good laboratory practice recommends that the unit be periodically serviced to ensure the unit is suitable for purpose. You must follow preventive maintenance instructions. In case equipment has to be serviced you can arrange this through your distributor. Prior to Inspection, Servicing, Repair or Return of Laboratory Equipment the unit must be cleaned and decontaminated.

Decontamination prior to equipment disposal

In use this product may have been in contact with bio hazardous materials and might therefore carry infectious material. Before disposal the unit and accessories should all be thoroughly decontaminated according to your local environmental safety laws.

3. UNPACKING AND EQUIPMENT INSTALATION

WARNING: Failure to follow the instructions in this section may cause equipment faults or injury to the user.

A. No special equipment is required for lifting but you should consult your local regulations for safe handling and lifting of the equipment.
B. Inspect the instrument for any signs of damage caused during transit. If any damage is discovered, do not use the instrument and report the problem to your supplier.
C. Ensure all transport locks are removed before use. The original packing has been especially designed to protect the instrument during transportation. It is therefore recommended to keep the original carton with its foam parts and accessories box for re-use in case of future shipments. Warranty claims are void if improper packing results in damage during transport.
D. Place the equipment on a flat surface and leave at least 10 cm of free space between the rear panel of the device and the wall. Never place the equipment in zones with vibration or direct sunlight.
E. Once the equipment is installed in the final place, the main power switch must be easily accessible.
F. Only use power cords that have been supplied with the equipment. In case that you have to replace them, the spare ones must have the same specs that the original ones.
G.  Make sure that the AC voltage in the electrical network is the same as the voltage selected in the equipment. **Never connect the equipment to a power outlet with voltage outside these limits.**

WARNING

For electrical safety reasons you only can connect equipment to power outlets provided with earth connections  .
This equipment can be used in installations with category II over-voltage according to the General Safety Rules.

The manufacturer accepts no responsibility for improper use of the equipment or the consequences of use other than that for which it has been designed.

 **WARNING**	**PC Control** Some of these instruments are designed to be controlled from a PC. To preserve the integrity of the equipment it is essential that the attached PC itself conforms to basic safety and EMC standards and is set up in accordance with the manufacturers' instructions. If in doubt consult the information that came with your PC. In common with all computer operation the following safety precautions are advised. • To reduce the chance of eye strain, set up the PC display with the correct viewing position, free from glare and with appropriate brightness and contrast settings • To reduce the chance of physical strain, set up the PC display, keyboard and mouse with correct ergonomic positioning, according to your local safety guidelines.

4. MAINTENANCE

WARNING: Failure to follow the instructions in this section may cause equipment fault.

- PRESS KEYS SOFTLY – Lightly pressing the keys is sufficient to activate them.
- Equipments do not require being disinfected, but cleaned for removing urine, faeces and odour. To do so, we recommend using a wet cloth or paper with soap (which has no strong odour). NEVER USE ABRASIVE PRODUCTS OR DISSOLVENTS.
- NEVER pour water or liquids on the equipment.
- Once you have finished using the equipment turn it off with the main switch. Clean and check the equipment so that it is in optimal condition for its next use.
- The user is only authorised to replace fuses with the specified type when necessary.

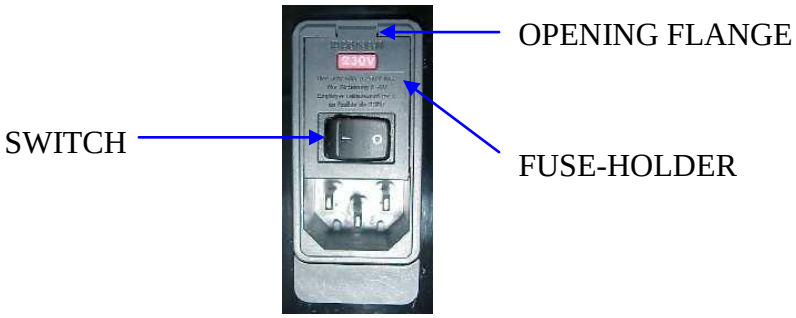


Figure 1. Power inlet, main switch and fuse holder.

FUSE REPLACEMENT OR VOLTAGE SETTING CHANGE

In case of an over-voltage or other incident in the AC net making it impossible to turn on the equipment, or if the equipment voltage setting is incorrect, check fuses according to the following procedure.

1 Remove power cord from the power inlet.

2 Open fuse-holder by pulling the flange with a regular screwdriver.

Figure 2. Open fuse-holder door.

3 Extract fuse holder using the screwdriver.

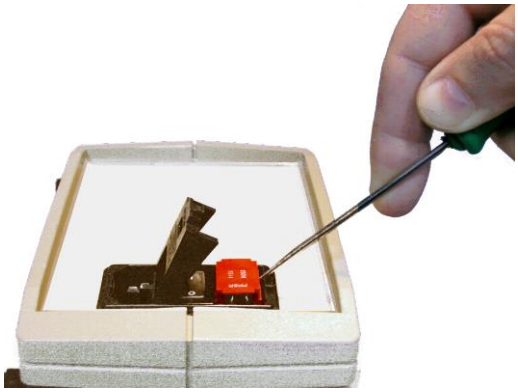
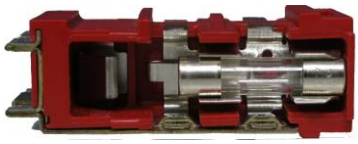


Figure 3. Extract fuse-holder.

4 Replace fuses if necessary. Insert fuses in the fuse-holder in the correct position.

CORRECT



INCORRECT

Figure 4. Fuses position.

5 Insert the fuse-holder again, positioning it according to the voltage in the AC net.

115V POSITON

230V POSITION

Figure 5 Fuse holder position.

6 If the fuses blow again, unplug the equipment and contact technical service.

WARNING

For electrical safety reasons, never open the equipment. The power supply has dangerous voltage levels.

5. TABLE OF CONTENTS

6. INTRODUCTION

The LE001PH Multitake cage is a system used to study rodents' feeding/drinking behaviour. The equipment features four interchangeable feeders. The feeders can be supplied for liquids or for solid food. The equipment monitors the weight of each feeder, making it possible to accurately determine the amount of food or drink that the animal has taken from each one.

The LE001PH also has a system for measuring motor activity. The position-detecting method is based on a frame and a battery of infrared beams arranged in a grid. The experimental animal's movements break the infrared beams, making it possible to determine the magnitude of the motor activity through an analysis of position and frequency of beam breakage.

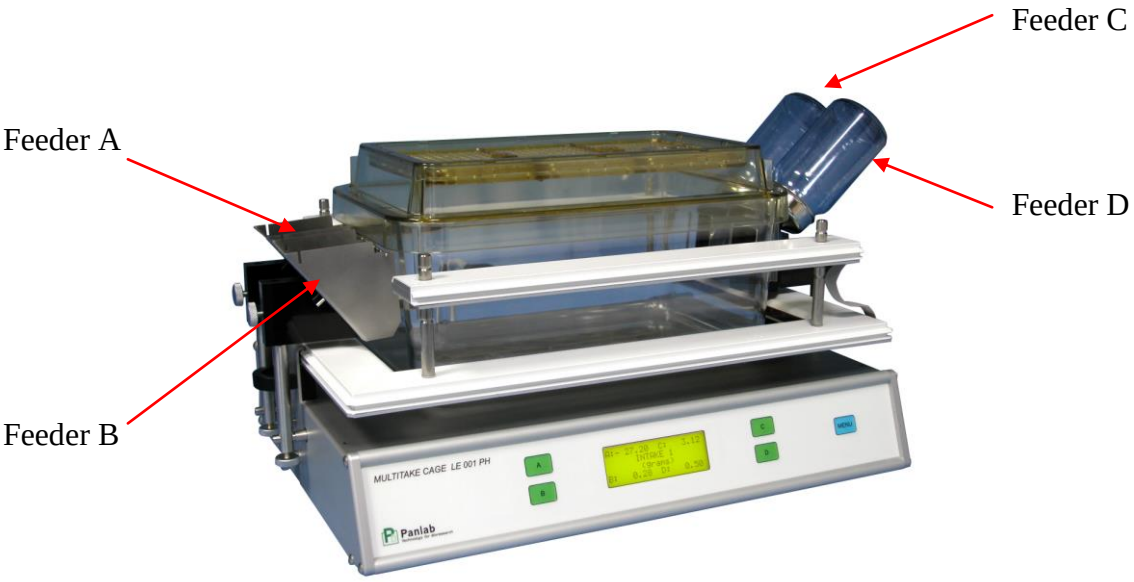


Figure 6. Multitake cage LE001PH.

The collected information is relayed to a computer via an RS232-type serial communication port. A single computer port can be used to link up to 24 LE001PH units by connecting them via the two RS232 serial ports (MAIN and REMOTE) included on each unit.

7. INSTALLATION

Place the equipment on a flat, horizontal surface and leave at least 10 cm of free space between equipment rear panel and the wall. Never place the equipment in areas with vibrations, air currents, or in direct sunlight.

7.1. ASSEMBLING FRAME AND BARS

The activity detection system consists of a frame for detecting X-Y movements and two bars for detecting rearings. The frame and bars are height-adjustable to adapt to the size of the animal.

The frame is equipped with 25 infrared emitters and 25 receivers, all aligned with each other. Each emitter and receiver pair forms an infrared beam. The beams in the frame are divided into two groups, 16 along the X axis and 9 on the Y axis. The frame provides information on deambulatory movement.

Bars are used for rearing detection. One bar has the 16 emitters and the other 16 receivers, thus forming 16 beams. Bars are position-dependent, which means that they must be installed in the correct position to work correctly (see Figure 11).

7.2. ASSEMBLING FEEDERS

The LE001PH has four feeders that are joined to each of the outgoing axles on the base sides. Insert a metal bar with a screw at one end (this is the feeder support), into an axle (see Figure 7). Notice the flat part this axle must face outward (see Figure 8).

WARNING: Avoid forcing or hitting axles and feeders. This could cause permanent deformation or damage to weight sensors.

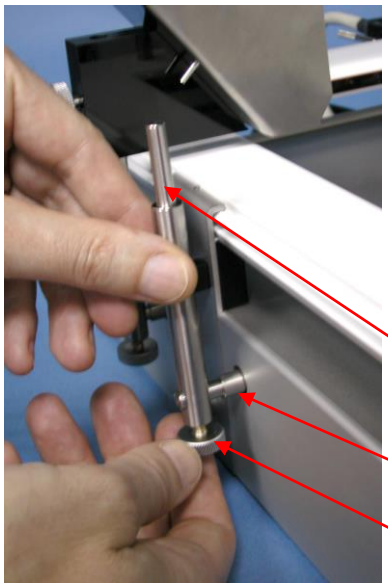


Figure 7. Assembling support of feeder.

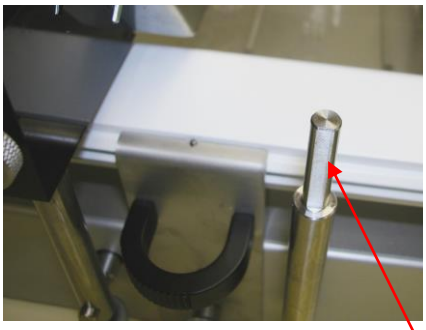


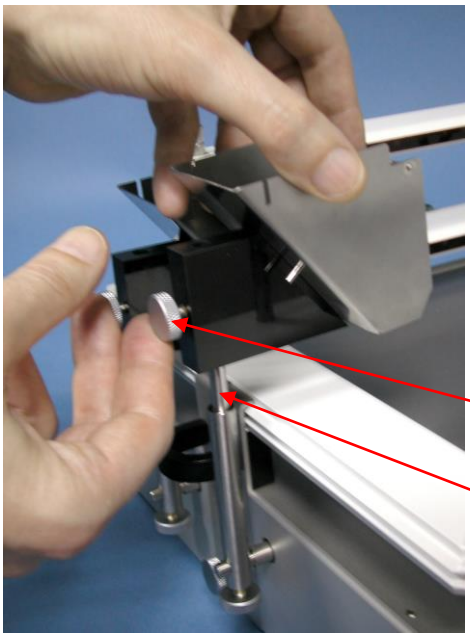
Figure 8. Flat part outward.

Flat part of this axle outward

Axle joined to weight sensor

Screw for horizontal adjustment of feeder

Adjust the proximity to the cage with the screw on the bottom part of this bar. Then affix the feeder to this bar and adjust its height with the screw behind the feeder (see Figure 9).



Srcrew for vertical feeder adjustment

Flat part of axle outward

Figure 9. Assembling the feeder.

Repeat this procedure to assemble the other feeders.

WARNING: Remember that if the feeders are interchanged, slight differences among them will require slight adjustments to the horizontal axle. Marking the feeder with a letter will help you remember the position and not have to adjust.

WARNING: When the cage is put in place, make sure that no feeder is in contact with it. If there is any contact the equipment will not work correctly.

7.3. INSTALLING THE CONNECTION LEADS

The frame is equipped with one connection lead that is installed by joining the rear connector of the frame to the connector labelled “Beams Frame” on the rear panel of the base.

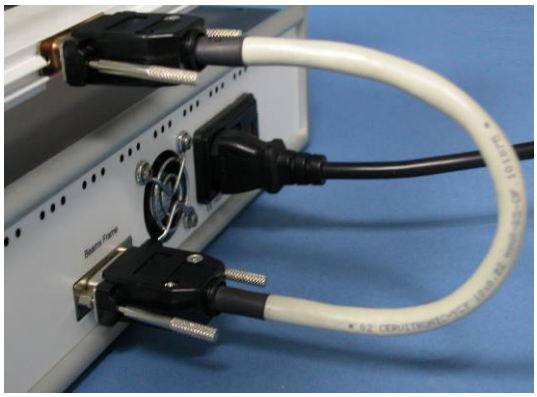


Figure 10. Frame connection.

Each bar is connected to the frame through a short flat cable. As bars are position-dependent, make sure that each bar is in the correct position (see Figure 11).

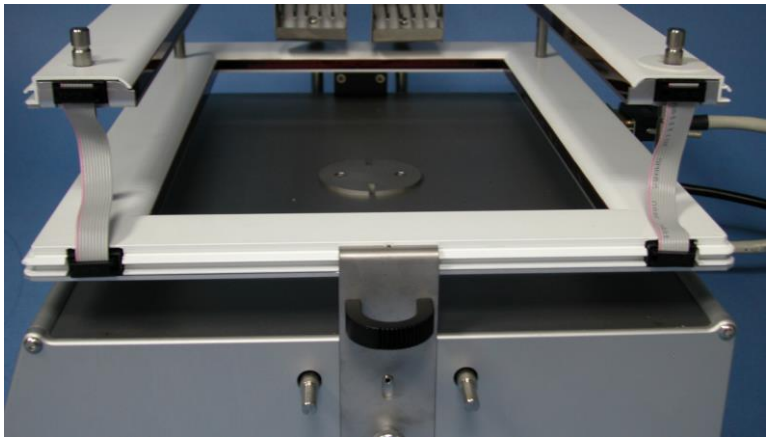


Figure 11. Bar position and connections.

Figure 12. Rear panel.

Each unit has its own power supply, with the input on the rear panel. The rear panel also has two additional connectors labelled “MAIN” and “REMOTE” used to transmit information from the unit to the computer or to other units.

When the LE001PH is used as a stand-alone unit, the output data are transmitted through the “MAIN” connector.

When several units are used at the same time, each of them can be connected separately to a computer. In this case, the “MAIN” connector of each unit is used as if only one unit were being used.

Alternatively, all of the units can be joined together to a single computer. In this case, each unit must be assigned a different ID number (see the “Set up Menu” section). The order in which the units are inter-connected is not important because the ID number identifies them. Only one of the units can be joined to the computer, as described in the previous paragraphs, while the other units are joined to each other so that the “REMOTE” connector is linked to the “MAIN” connector, as follows:

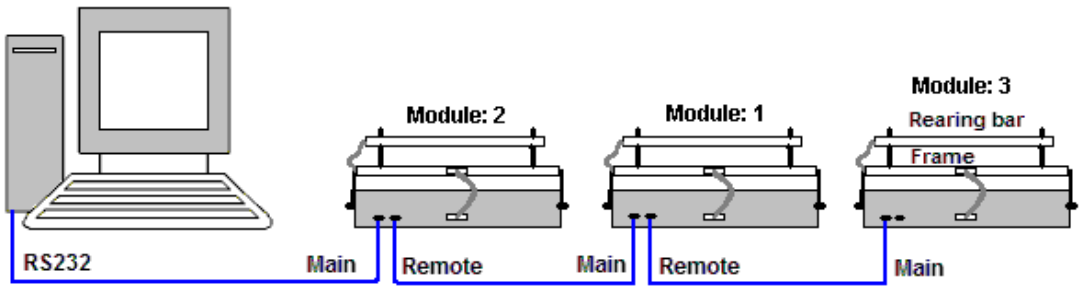


Figure 13. Connection of several units in series.

7.4. SOFTWARE

7.4.1. COMPULSE SOFTWARE

The LE001PH system is supplied with the COMPULSE software application, which logs the data sent by the different units, displays the data on the computer screen and generates data files in formats that can be used by other programs for analysis.

Please refer to the enclosed COMPULSE User's Manual for a more detailed explanation of the available functions.

7.4.2. ACTITRACK SOFTWARE

ACTITRACK software is also included in the LE001PH system to facilitate analysis of the activity information captured with COMPULSE.

Please refer to the enclosed ACTITRACK User's Manual for a more detailed explanation of the available functions.

8. STARTING UP THE UNIT

To start the equipment up, switch the mains switch on the rear panel to ON. After the initial screen and warm-up message, the equipment will automatically set all weights to zero, and the equipment will be ready to start a new experiment. The display will show the main screen:

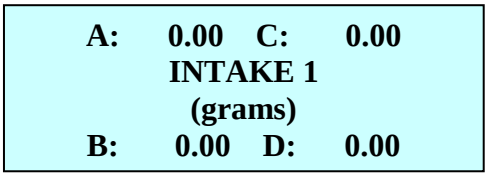


Figure 14. Main screen.

A: 0.00 Indicates the amount in grams of food or drink that the animal has ingested from the feeder placed in the rear of the unit, on the left side.

B: 0.00 Indicates the amount in grams of food or drink that the animal has ingested from the feeder placed in the front of the unit, on the left side.

C: 0.00 Indicates the amount in grams of food or drink that the animal has ingested from the feeder placed in the rear part of the unit, on the right side.

D: 0.00 Indicates the amount in grams of food or drink that the animal has ingested from the feeder placed in the front part of the unit, on the right side.

Observe that the number shown after the word “INTAKE” is the identifier number that the unit has been assigned.

8.1. RESETTING

The weight of a feeder can be reset to zero on the main screen at any time. For example, it is advisable to do so after reloading food. To reset to zero, press the key associated with the feeder.

- Press the **A** key to reset the weight of the feeder placed in the rear part of the unit on the left side of the equipment to zero.
- Press the **B** key to reset the weight of the feeder placed in the front part of the unit on the left side of the equipment to zero.
- Press the **C** key to reset the weight of the feeder placed in the rear part of the unit on the right side of the equipment to zero.
- Press the **D** key to reset the weight of the feeder placed in the front part of the unit on the right side of the equipment to zero.

WARNING: During the resetting process, avoid vibrations, movements and air currents. The unit has a device for detecting movement. If movement is detected, the resetting process will be delayed until the movement disappears. In this case, other processes will be stopped.

8.2. FRAME POSITION

The Activity Detection system consists of a frame for detecting X-Y movements and two bars for detecting rearings. The frame and bars are height-adjustable to adapt to the size of the animal. Frame height is adjusted using the fixing screws located on the sides of the base (see Figure 15).

Figure 15. Frame height adjustment.

Bars are height-adjusted by moving them up or down (see Figure 16).

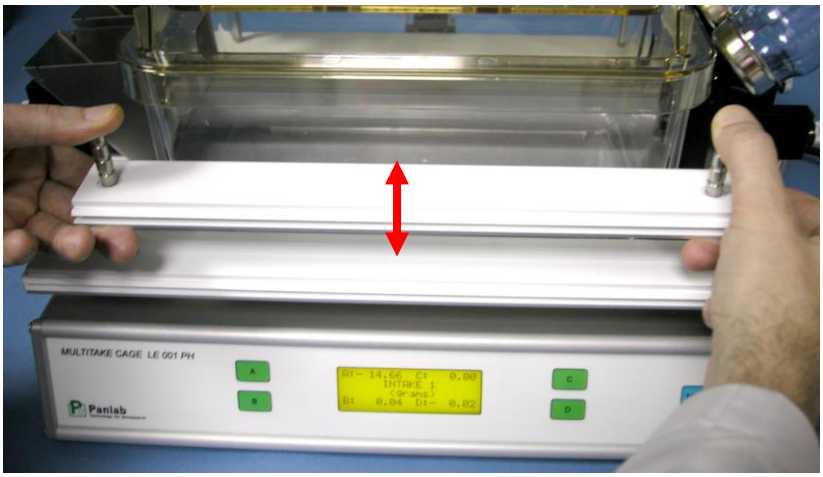


Figure 16. Bar height adjustment.

WARNING: Both bars for rearing measurement must be at the same height to work correctly.

8.3. MAIN MENU

Press the MENU key to enter the main menu. The screen will show:

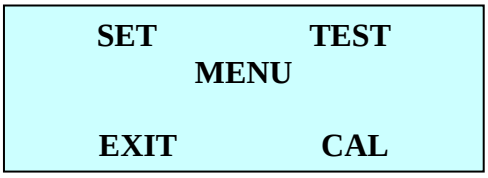


Figure 17. Menu screen.

In this menu, the keys are associated with a function as described in the following table:

Key	Function	Description
A	SET	Configuration of the Actimeter parameters
B	EXIT	Return to main screen
C	TEST	Tool to check the actimeter
D	CAL	Calibration of the weight sensors

The layout of keys **A**, **B**, **C** and **D** has been arranged to match the instruction on the screen, at the same height and on the same side. In this case, **A** will be used to access the SET menu, **B** to EXIT, **C** to access TEST and **D** to access CAL.

In the course of these instructions, whenever an instruction is referred to, it will be assumed that the associated key will be the one used, and vice-versa.

8.3.1. SET-UP MENU

Press the **A** key [SET] in the menu to enter the set-up menu. The display will show:

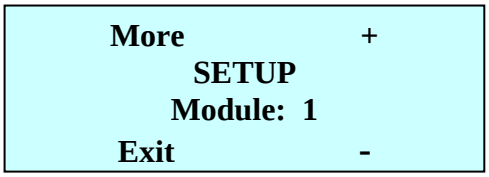


Figure 18. Set-up screen.

Press the **A** key [MORE] to go through the different parameters that can be configured: Module, backlight and beep.

There is complete information about the set-up of each of these parameters in the following sections.

8.3.1.1. MODULE ID (IDENTIFICATION)

In the SETUP menu, press the **A** key [MORE] reputedly until the display shows **Module**:

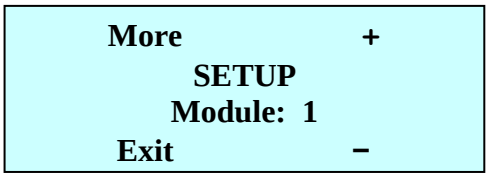


Figure 19. Module screen.

This menu is needed to configure the system when more than one unit is active and connected to the same computer. In this case, each unit must have an associated identification number (ID) that distinguishes it from the rest. The experimenter has 24 numbers available for this purpose. All control units will have the number 1 associated with them by default. If two or more control units have the same number associated, the computer program will not inform of this and nor will any indication appear on the unit displays. However, the experimenter must remember that the system will not work properly in these circumstances. Therefore, make sure that each control unit has a different ID.

- To change the module number, press the keys associated with + or –.

The assigned number will be shown on the main screen after the word "INTAKE" i.e. INTAKE 3, for module 3.

8.3.1.2. BACKLIGHT

In the SETUP menu, press the **A** key [MORE] repeatedly until the display shows the word "**Backlight**".

This menu option allows the light of the display to be turned on or off.

- Press the key associated with On to turn on the light or press the key associated with Off to turn the light off.

The default value is: **Backlight: ON**.

8.3.2. SETUP SOUND

The pressed-key sound can be enabled or disabled from this menu.
To configure the beep sound, in the SETUP menu, press the **A** key [MORE] repeatedly until the display shows the word "**Beep**".

Enable/disable the BEEP by setting this parameter to ON or OFF.

- Press the key associated with **On** to enable the beep or press the key associated with **Off** to disable the beep.

The default value is: **Beep: ON**.

8.4. TEST

Press the **C** key [TEST] in the menu screen to enter the test menu. The display will show:

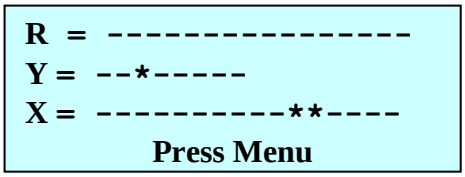


Figure 20. Test screen.

The operation of infrared beams can be checked with TEST. An * indicates that the beam is being interfered with by an opaque body. A – indicates that the beam is reaching the receiver.

- R: Is the rearing detection. * indicates a beam cut, - indicates a beam not cut.
- Y: Is the Y axis. * indicates a beam cut, - indicates a beam not cut.
- X: Is the X axis. * indicates a beam cut, - indicates a beam not cut.
- Press the **MENU** key to exit.

8.5. WEIGHING CALIBRATION

Press the **D** key [CAL] in the MENU screen to enter the calibration menu. The display will show:

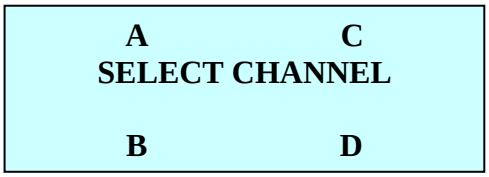


Figure 21. Calibration screen.

WARNING: During the calibration process, avoid vibrations, movements and air currents. The equipment has a device for detecting movement. If movement is detected, the calibration process will be delayed until the movement disappears.

Press the key associated with the feeder to be calibrated. The equipment will be newly reset to zero. After a short time, depending on the stability, the display will show:

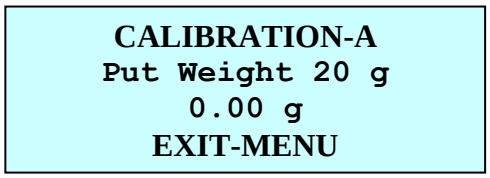


Figure 22. Calibration screen.

Follow the instructions shown on the display. In other words, put a weight of 20.00 g in the feeder being calibrated and remove it only when the display gives instructions to do so. The program will return to the calibration menu.

WARNING: If the weight used in the calibration is not equal to 20.00 g the calibration will not be correct. Note that only major differences are detected by the equipment as incorrect reference weights.

This process can be repeated with other feeders. Press the **MENU** key to exit.

9. CLEANING THE EQUIPMENT

9.1. CLEANING THE CAGE

Accumulated urine and faeces in the cage should be cleaned. To clean the cage you can use a soapy solution and rinse with water, then use a dry cloth to dry it.

9.2. CLEANING THE PLATFORM

To clean the top cover of the control unit, a dry cloth or one moistened with alcohol must be used. It can also be cleaned by suction.

9.3. FEEDER CLEANING

The food debris accumulated on the feeder and that on the tray that collects the food that falls from the feeder should be cleaned.

9.4. CLEANING THE BOTTLE

To clean the bottle a soapy solution should be applied, rinse thoroughly and finally be dried with a cloth.

9.5. CLEANING THE FEEDER AND BOTTLE STANDS

You should periodically clean with an aspirator to avoid that chips of food are accumulated.

10. TROUBLESHOOTING

Instructions to solve the most frequent problems are given in the following table.

PROBLEM	SOLUTION
The equipment does not start up.	Make sure the voltage of mains is the same as the module in the fuse holder. See **¡Error! No se encuentra el origen de la referencia.**
The equipment does not start up.	Check the condition of the fuses. See page **¡Error! Marcador no definido.**
The equipment starts but remains frozen on the warm up screen.	-Take out the cage to see if the unit passes this screen. If so, adjust the feeders to avoid any contact with the cage. - Check for any contact between feeders and frame. - Change the placement of the equipment to avoid air currents.
There are one or several beams broken in the test.	-Take out the cage to see if the beams continue broken. If not, clean the cage. -If the beam(s) continue to be cut, clean the frame. If the error continues, call the technical service. - If the trouble is in the rearing, make sure that both bars are at the same height.
The backlight in the display is off.	Turn it on as indicated on page 18 of this manual.
One or several units are not sending data to the computer.	- Check the connections. See Figure 13 on page 12. -Make sure that each unit has a different module number. See MODULE ID (IDENTIFICATION) on page 18.
One or more feeders are not weighing correctly.	- Calibrate them as indicated on page 20.

11. PREVENTIVE MAINTENANCE

	EXPERIMENT	WEEKLY	MONTHLY
CHECK CALIBRATION			☑[1]
CLEAN THE CAGE	☑		
CLEAN THE PLATFORM		☑	
CLEAN THE FEEDER	☑		
CLEAN THE BOTTLE	☑		
CLEAN BOTTLE AND FEEDER SUPPORTS		☑	
CHECK IR BARRIER			☑[2]
CHECK RIGHT PLACING OF FEEDER AND BOTTLE			☑[3]

[1] Read chapter 8.5WEIGHING CALIBRATION
[2] [2] Read chapter **¡Error! No se encuentra el origen de la referencia.¡Error! No se encuentra el origen de la referencia.**
[3] [3] Read chapter **¡Error! No se encuentra el origen de la referencia.¡Error! No se encuentra el origen de la referencia.**

12. SPECIFICATIONS

POWER SUPPLY	
Input voltage:	115/230 VAC
Frequency:	50/60 Hz
Fuse type:	2 fuses 5mm*20mm 250mA 250V Fast
Maximum Power:	10W
Conducted Noise:	EN55022 /CISPR22/CISPR16 class B
GENERAL SPECIFICATIONS	
Warm-up time	< 1 minute (under stable weight)
WEIGHT SENSOR	
Technology:	Load cell
Number of sensors:	4, one for each feeder
Measurement range:	0-600 g
Resolution:	20 mg
Linearity:	0.03%
Accuracy:	+/- 0.005% F.S.
Zero tracking:	Automatic
ACTIVITY	
Technology:	Infrared beams
Lower frame:	16 x 9 beams
Upper bars:	16 beams
Maximum space between beams:	15 mm
ENVIRONMENTAL CONDITIONS	
Operating temperature:	10°C to +40°C
Operating relative humidity:	0% to 85% RH, non-condensing
Storage temperature:	0°C to +50°C, non-condensing
SERIAL OUTPUT	
Type:	RS232C
Baudrate:	19200
Frame:	1start bit + 8 bits data + 1 stop bit
Main Connector:	Sub D 9 female
Remote Connector:	Sub D 9 male
DIMENSIONS	
Width x Height x Depth:	480 x 270 x 320 mm
Weight:	8.73 kg

Panlab | HARVARD APPARATUS

DECLARACIÓN DE CONFORMIDAD
DECLARATION OF CONFORMITY
DECLARATION DE CONFORMITÉ

Nombre del fabricante:	**Panlab s.l.u.**
Manufacturer's name:	www.panlab.com
Nom du fabricant:	info@panlab.com
Dirección del fabricante:	Energía, 112
Manufacturer's address:	08940 Cornellà de Llobregat
Adresse du fabricant:	Barcelona SPAIN

Declara bajo su responsabilidad que el producto: **MULTITAKE CAGE**
Declares under his responsibility that the product:
Déclare sous sa responsabilité que le produit:

Marca / Brand / Marque: **PANLAB**
Modelo / Model / Modèle: **LE001PH**

Cumple los requisitos esenciales establecidos por la Unión Europea en las directivas siguientes:
Fulfils the essential requirements established by The European Union in the following directives:
Remplit les exigences essentielles établies pour l'Union Européenne selon les directives suivantes:

2006/95/EC	Directiva de baja tensión / Low Voltage / Basse tensión
2004/108/EC	Directiva EMC / EMC Directive / Directive CEM
2012/19/EU	La Directiva de Residuos de Aparatos Eléctricos y Electrónicos (WEEE) / The Waste Electrical and Electronic Equipment Directive (WEEE) / Les déchets d'équipements électriques et électroniques (WEEE)
2011/95/EC	Restricción de ciertas Sustancias Peligrosas en aparatos eléctricos y electrónicos (ROHS) / Restriction of the use of certain Hazardous Substances in electrical and electronic equipment (ROHS) / Restriction de l'utilisation de certaines substances dangereuses dans les équipements électriques et électroniques (ROHS)
2006/42/EC	Directiva mecánica / Machinery directive / Directive mécanique

Para su evaluación se han aplicado las normas armonizadas siguientes:
For its evaluation, the following harmonized standards were applied:
Pour son évaluation, nous avons appliqué les normes harmonisées suivantes:

Seguridad / Safety / Sécurité:	**EN61010-1:2010**
EMC:	**EN61326-1:2013 Class A**
Safety of machinery:	**EN ISO 12100:2010**

En consecuencia, este producto puede incorporar el marcado CE:
Consequently, this product can incorporate the CE marking:
En conséquence, ce produit peut incorporer le marquage CE:

CE

En representación del fabricante:
Manufacturer's representative:
En représentation du fabricant:

Carme Canalís
General Manager
Panlab s.l.u., a division of Harvard BioScience

Cornellà de Llobregat, Spain
30/04/2014

(GB) *Note on environmental protection:*

After the implementation of the European Directive 2002/96/EU in the national legal system, the following applies:
Electrical and electronic devices may not be disposed of with domestic waste.Consumers are obliged by law to return electrical and electronic devices at the end of their service lives to the public collecting points set up for this purpose or point of sale. Details to this are defined by the national law of the respective country. This symbol on the product, the instruction manual or the package indicates that a product is subject to these regulations. By recycling, reusing the materials or other forms of utilising old devices, you are making an important contribution to protecting our environment.

(E) *Nota sobre la protección medioambiental:*

Después de la puesta en marcha de la directiva Europea 2002/96/EU en el sistema legislativo nacional, Se aplicara lo siguiente:
Los aparatos eléctricos y electrónicos, así como pilas y baterías, no se deben tirar a la basura doméstica. El usuario está legalmente obligado a llevar los aparatos eléctricos y electrónicos, así como pilas y baterías, al final de su vida útil a los puntos de recogida municipales o devolverlos al lugar donde los adquirió. Los detalles quedaran definidos por la ley de cada país. El símbolo en el producto, en las instrucciones de uso o en el embalaje hace referencia a ello. Gracias al reciclaje, a la reutilización de materiales i a otras formas de reciclaje de aparatos usados, usted contribuirá de forma importante a la protección de nuestro medio ambiente.

(F) *Remarques concernant la protection de l'environnement :*

Conformément à la directive européenne 2002/96/CE, et afin d'atteindre un certain nombre d'objectifs en matière de protection de l'environnement, les règles suivantes doivent être appliquées.
Elles concernent les déchets d'équipement électriques et électroniques. Le pictogramme "picto" présent sur le produit, son manuel d'utilisation ou son emballage indique que le produit est soumis à cette réglementation. Le consommateur doit retourner le produit usager aux points de collecte prévus à cet effet. Il peut aussi le remettre à un revendeur.En permettant enfin le recyclage des produits, le consommateur contribuera à la protection de notre environnement. C'est un acte écologique.

(D) *Hinweis zum Umweltschutz:*

Ab dem Zeitpunkt der Umsetzung der europäischen Richtlinie 2002/96/EU in nationales Recht gilt folgendes:
Elektrische und elektronische Geräte dürfen nicht mit dem Hausmüll entsorgt werden. Der Verbraucher ist gesetzlich verpflichtet, elektrische und elektronische Geräte am Ende ihrer Lebensdauer an den dafür eingerichteten, öffentlichen Sammelstellen oder an die Verkaufstelle zurückzugeben. Einzelheiten dazu regelt das jeweilige Landesrecht. Das Symbol auf dem Produkt, der Gebrauchsanleitung oder der Verpackung weist auf diese Bestimmungen hin. Mit der Wiederverwertung, der stofflichen Verwertung oder anderer Formen der Verwertung von Altgeräten leisten Sie einen wichtigen Beitrag zum Schutz unserer Umwelt.

(I) *Informazioni per protezione ambientale:*

Dopo l'implementazione della Direttiva Europea 2002/96/EU nel sistema legale nazionale, ci sono le seguenti applicazioni:
I dispositivi elettrici ed elettronici non devono essere considerati rifiuti domestici. I consumatori sono obbligati dalla legge a restituire I dispositivi elettrici ed elettronici alla fine della loro vita utile ai punti di raccolta collerici preposti per questo scopo o nei punti vendita. Dettagli di quanto riportato sono definiti dalle leggi nazionali di ogni stato. Questo simbolo sul prodotto, sul manuale d'istruzioni o sull'imballo indicano che questo prodotto è soggetto a queste regole. Dal riciclo, e re-utilizzo del material o altre forme di utilizzo di dispositivi obsoleti, voi renderete un importante contributo alla protezione dell'ambiente.

(P) *Nota em Protecção Ambiental:*

Após a implementação da directiva comunitária 2002/96/EU no sistema legal nacional, o seguinte aplica-se:
Todos os aparelhos eléctricos e electrónicos não podem ser despejados juntamente com o lixo doméstico Consumidores estão obrigados por lei a colocar os aparelhos eléctricos e electrónicos sem uso em locais públicos especficos para este efeito ou no ponto de venda. Os detalhes para este processo são definidos por lei pelos respectivos países. Este símbolo no produto, o manual de instruções ou a embalagem indicam que o produto está sujeito a estes regulamentos. Reciclando, reutilizando os materiais dos seus velhos aparelhos, esta a fazer uma enorme contribuição para a protecção do ambiente.