



## Learned Helplessness

Cat. No. 47500

### General

When rodents are exposed to inescapable and unpredictable stress, such as forced swim or inescapable footshock, they often develop deficits in memory and learning tasks (e.g. **Active Avoidance**), and they often show also analgesic reactions (**S.I.A. Stress-Induced Analgesia**).

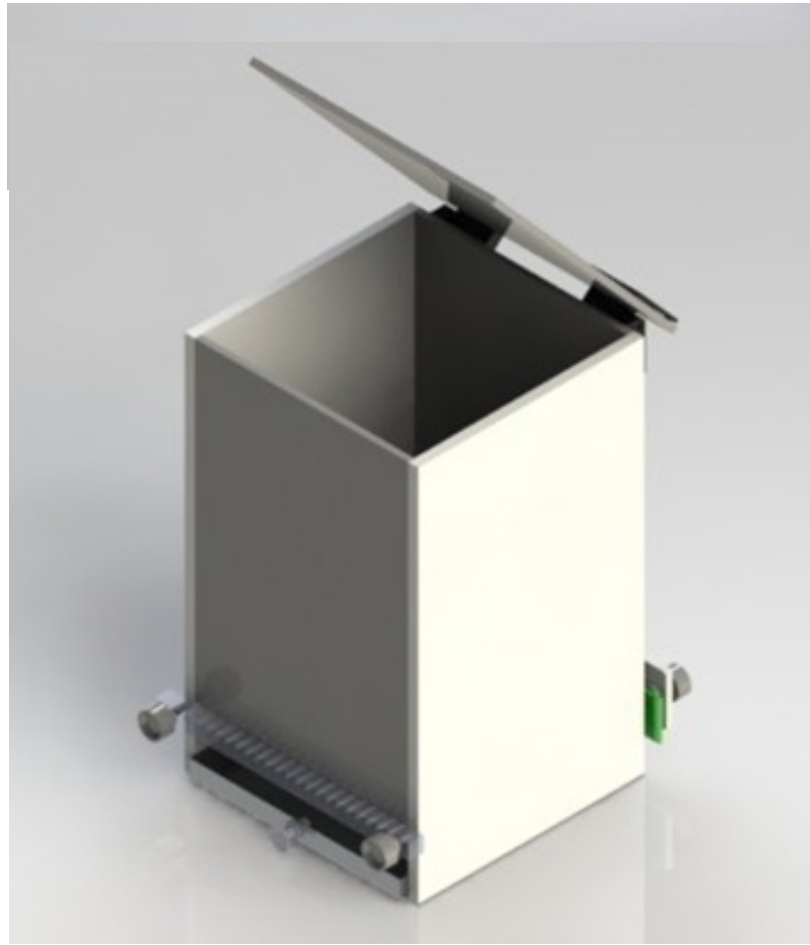
The **Ugo Basile Set-Up for Learned Helplessness** is based on a sophisticated generator of unpredictable random shocks delivered to the grid floor of a rodent box where no escape is possible.

Electric shocks can be randomized in terms of shock length and interval.

Complex trains can be programmed.

**Up to 4 animals** can be treated simultaneously in 4 independent boxes, controlled by the same electronic unit and software.

The set-up for Learned Helpless is part of the new UB Behavioral Cage program, exploiting the potentiality of a modern controller with touch-screen.



### IDEAL TO STUDY

- Depression & Stress
- Learning & Memory Impairment
- Stress-Induced Analgesia (S.I.A.)

### New Model

**tip!** this is part of the **beehive cage-manager system**; buy a single touch-screen controller, and manage all UB conditioning cages. **Ask for details!**



### Main Features

- Randomizable shock patterns
- **Maximum flexibility:** configure your own Experimental Schedules on the touch-screen controller
- The electronic unit encompasses all controls for **up to 4 animal cages!**
- The new “launcher” application, makes it possible to manage other UB behavioral cages with the same **Touch-Screen Controller 40500-001**; just purchase the hardware and the application software for the additional test!
- **Remote Control feature** will make remote service and software upgrades extremely simple!

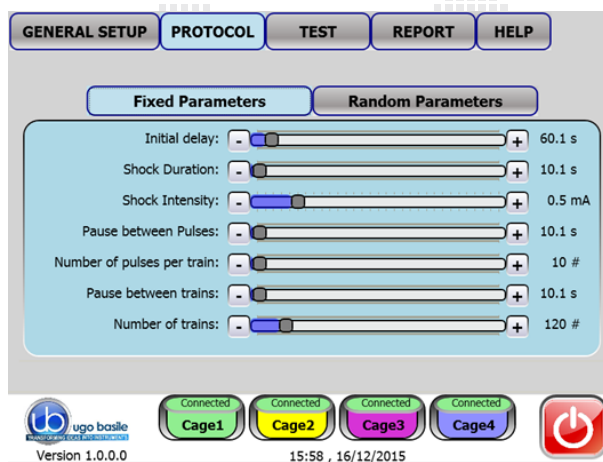
## System Description

Different set-ups, depending on animal (rat or mouse) and number of cages, can be obtained by combining the following elements:

- **Touch-Screen Controller with Shocker**
- **Rat Cage** (up to 4 with one controller)  
or
- **Mouse Cage** (up to 4 with one controller)
- **Expansion Box**, for multiple cage set-up

## Programming/Recording Unit

The **40500-001** Programming/Recording Unit, encompassing all controls, incorporates a constant-current high precision 8-pole shocker, and manages data acquisition: data are stored inside the unit and can be downloaded via the USB key provided as standard, for further processing via Excel, Access, etc.



The Unit, incorporating a 12" touch-screen, manages the Learned Helplessness Test via the **40530-010** Software. Up to 4 cages can be connected to the same Controller.

If more than one cage is connected, an expansion box **40500-005** is required for each additional cage.

The trials can be configured on the touch-screen controller, entering the setting via the virtual keyboard: train features, shock and timing of the different experimental sequences.

The system includes a user-friendly reporting software, to collect, visualize and manage data related to the delivered shocks; this is especially important to analyze the randomized shocks and have full control on the performed stimulation.

## Randomizer

The **Touch-Screen controller** is also a sophisticated generator of unpredictable random shocks delivered to the grid floor of the cage.

Electric shocks can be randomized in terms of shock length, interval and complex trains can be programmed. It connects to up to 4 cages.

## Rat and Mouse Cage

The dimensions of **Rat Cage 47502** are 22x22x20(h)cm; **Mouse Cage 47503** is dimensioned 17x17x20 (h) cm.

Both Cages include an electrified floor and a catch pan.

The electrical stimulus is applied to the floor bars of the cage and by an 8-pole "scrambling" circuit incorporated in the touch-screen controller.

All necessary cables and connectors are included to make it a ready-to-use system!

## Ordering Information

- 40500-001** Touch-Screen Controller & Shocker
- 47500-010** Learned-Helplessness Software and activation
- 47502** Rat Cage, complete with electrified floor & catch pan
- 47503** Mouse Cage, complete with electrified floor & catch pan
- 40500-005** Expansion Box, for multiple cage set-up

## Specifications :

Power Requirement 115/230V, 50/60Hz, 30W max.  
Shock Parameters : constant current, from 0.1 to 2.9mA in 0.1mA steps  
Manual or external operation (via 5V TTL signals), with optional I/O box 46000-150

## Physical:

Weight	3.9Kg (40500-001)
	5.3Kg (47502)
	3.4Kg (47503)
Shipping Weight	5.7Kg (40500-001)
	9Kg (40552)
	6Kg (40553)
Packing	80x60x44 (control unit & one cage)

## Bibliography

- Method: W.H. Freeman: "**Helplessness: On Depression, Development, and Death**" ISBN 0-7167-0752-7. (Paperback reprint edition, W.H. Freeman, 1992, ISBN 0-7167-2328-X)
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