

New Fear Conditioning System

Series 46100

General

The Ugo Basile Fear Conditioning Systems 46000 includes all the components to run experiments on mice or rats, according to the paradigms:

- **Contextual Fear Conditioning**
- **Cued Fear Conditioning**

The detection of **Freezing** is automated and based on video analysis. The **shock**, **light** and **sound** parameters are controlled by software (USB) or manually, via the new Electronic Unit, based on touch-screen technology.

System Configuration

A typical **Basic System** consists of:

- Controller with touch-screen
- Animal box with electrified floor and Context Kit (3 floors, 9 walls)
- Isolation Cubicle, with dual (visible/I.R.) light, speaker and fan

The **complete system** also include:

- Freezing-detection Software
- USB Videocamera

Preinstalled PC can be supplied as optional

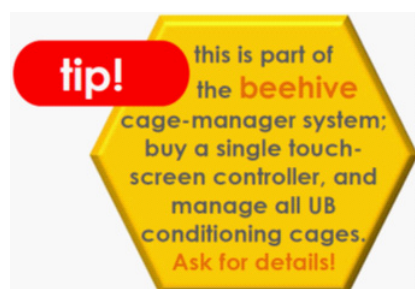
Memory



Behavior

"I have been using your fear conditioning setup pretty heavily in the last months and I am really happy..."

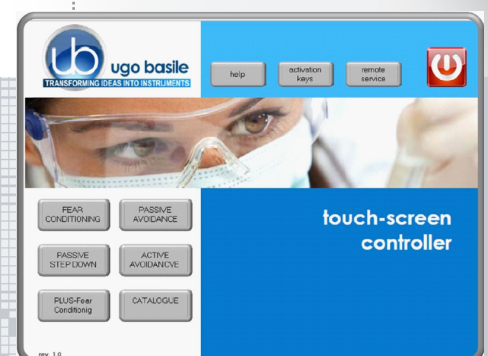
Dr. Alexandra Klein, Max Planck Institute



Main Features

- All controls managed by a single unit
- **AUTOMATIC** detection of **FREEZING** also in **Total Darkness**
- Specific versions for rats or mice
- Multiple Cage Set-up (up to 16 cages, in

- 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!
- **New software NG** on board



System Components

Software and IR-CCD camera

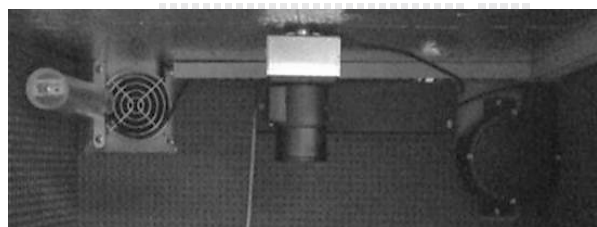
The Ugo Basile Fear Conditioning system benefits of a specific version of the Any-maze software, Cat. No. 60000-FC; the software controls the Ugo Basile hardware, automatically detects the *freezing* behavior and analyzes the results across time.



Measured parameters include:

- Total *Freezing* time
- No. and duration of freezing episodes across time

The USB videocamera 47400-030, is sensitive to IR light and allows for *freezing* detection even in total darkness.



Wide angle lenses and IR filters are included.

Controller

The *new* FC Controller 40500-001, with the aid of the new application software 46000-110 consolidates all controls in a single compact electronic unit.

On its 12" touch-screen, the researcher sets the following parameters via the user-friendly interface

- **Sound**, in the range 100Hz-18KHz; 55-100dB or white noise. The speaker is included in the Cubicle.
- **Shock**: constant current (from 0.1 to 2.9 mA in 0.1 mA steps). The shock can be controlled via external operation (via 5V TTL signals)
- **Light**

Connections are arranged on the controller back panel:



Animal Box with Electrified Grid Floor

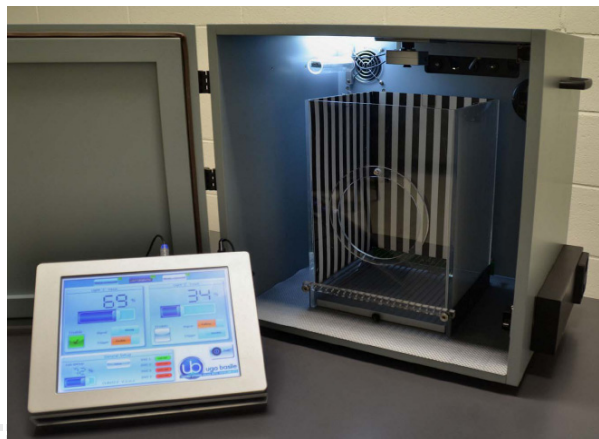
- **46003** Mouse Box:
inside dimensions: 17x17x25(h) cm
- **46002** Rat Box
inside dimensions : 26x26x30(h) cm

Context Kit

A complete set of removable contexts is provided to alter the colour of the box walls and floor. Each animal box includes a kit with: 3 striped walls, 3 chessboard, 3 grey walls and 3 plastic floors (white, black, grey).

Isolation Cubicle

The new-design Isolation Cubicle 46000-590 includes a dual (visible and I.R.) LED light, a loudspeaker and a noiseless fan all conveniently positioned inside the sound-attenuating cubicle. Multiple-cage set-ups include an expansion-cubicle with its slave electronics on board



Preinstalled PC (optional)

Our Fear Conditioning systems can be used with Windows laptop or desktop PCs. We also offer ready-to-use systems, including a PC, with preinstalled software & hardware, fully tested.

Ordering Information

COMPLETE SYSTEMS (with software and USB camera)

MOUSE RAT

46153	46152	Complete Single-Cage FC System
46253	46252	Complete Two-Cage FC System
46453	46452	Complete Four-Cage FC System

BASIC SYSTEMS (without software/camera)

MOUSE RAT

46103	46102	Basic Single-Cage FC System
46203	46202	Basic Two-Cage FC System
46403	46402	Basic Four-Cage FC System

Additional Animal Kits, including Cage, expansion cubicle & electronics (no camera) are available:

46102-002	Rat
46103-003	Mouse

All components can be ordered separately

Bibliography

- D.W. Anderson et alia: "Effects of low level lead exposure on associative learning and memory in the rat: Influences of sex and developmental timing of exposure" *Toxicology Letters* 246: 57-64, 2016
- D. Sierra-Mercado et alia: "Controlled cortical impact before or after fear conditioning does not affect fear extinction in mice" *Brain Research* 1606: 133-141, 2015
- S. Yusufishaq et alia: "Post-Weaning Social Isolation impairs observational fear conditioning" *Behav. Brain Res.* 242 (1): 142-149, 2013
- A. Sirri et alia: "Temporal gene expression profile of the hippocampus following trace fear conditioning". *Brain Research* 1308, 14-23, 2010