

## Fear Conditioning System

Cat. No. 46100

### General

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

- Contextual Fear Conditioning
- Acoustically-Cued Fear Conditioning

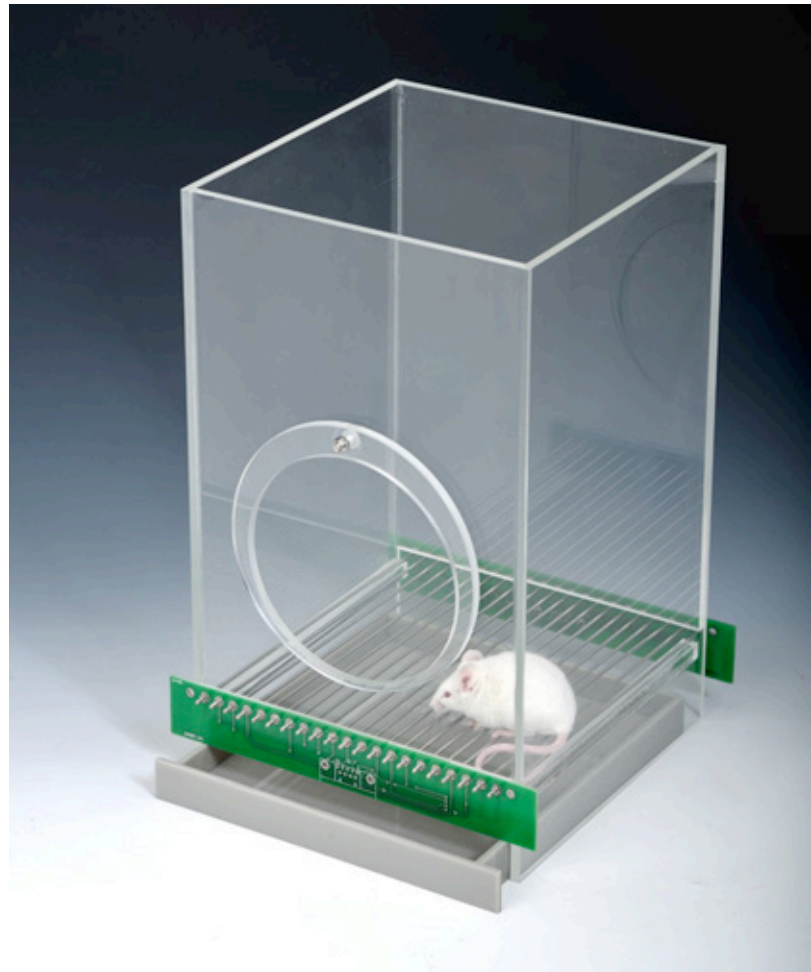
The detection of Freezing is automated and based on video analysis. The shocker and the sound generator can be controlled by software (USB) or manually.

### System Configuration

A typical Complete System consists of:

- Software and IR-CCD camera
- Sound Generator and Shocker
- Animal box with electrified floor
- Context Kit (3 floors, 6 walls)
- Isolation Cubicle, lights (IR and visible) and fan
- Preinstalled PC (optional)

Basic systems, without software and CCD camera are available (see ordering information).



**Memory**

**Behaviour**

**AUTOMATIC  
Detection of Freezing  
even in total DARKNESS**

### Main Features

- AUTOMATIC detection of FREEZING, also in Total Darkness
- Specific versions for rats or mice
- Multiple Animals (up to 4)

## System Components

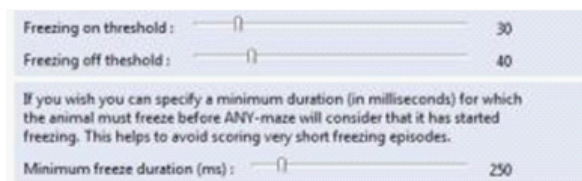
### Software and IR-CCD camera

The Ugo Basile Fear Conditioning system includes a specific version of the Any-maze software to control the Ugo Basile hardware (i.e., the Sound Generator and the Shocker): the software automatically detects freezing behavior and analyze the results across time.



Measured parameters include:

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



The provided CCD camera, is sensitive to IR light and allows for freezing detection even in total darkness. The camera can be positioned on any wall of the isolation cubicle (top, side, door) by provided suction cups.



Wide angle lenses and IR light are also included.

### Sound Generator

- Two channels to deliver frequency sounds (100Hz-40KHz; 1-150dB) or white noise (1 speaker included)
- Two TTL output to drive external devices, e.g., two Ugo Basile shockers
- Each channel can be operated via USB (with the provided software), manually or via 5V TTL signals.

### Shocker

- Constant current (from 0.1 to 2.9 mA in 0.1 mA steps)
- Manual or external operation (via 5V TTL signals)

### Animal Box with Electrified Grid Floor

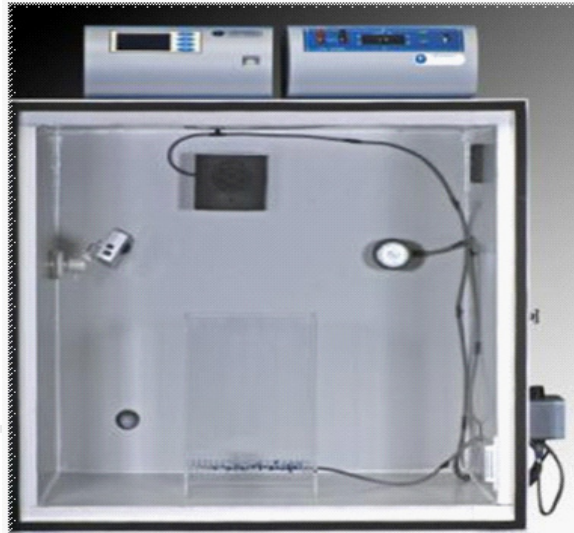
- Mouse Box inside dimensions: 17x17x25(h) cm
- Rat Box inside dimensions : 26x26x30(h) cm

### Context Kit

A complete set of removable contexts is provided to alter the colour and texture of the box walls and floor. Each animal box includes a kit with: 4 striped walls, 4 chessboard walls, 3 plastic floors (white, black, grey). Custom contexts are available on request.

### Isolation Cubicle

- Includes visible light, IR light, light controller and fan
- The loudspeaker, the IR CCD camera and the lights can be freely positioned within the cubicle by suction cups (included).



### Preinstalled PC (optional)

The Ugo Basile Fear Conditioning systems can be used with both Windows-based laptop or desktop PCs (firewires and USB ports are required). Desktop PCs are suggested for multiple configurations (2 - 4 animals) and can also be purchased directly from Ugo Basile, with all

## Ordering Information

### COMPLETE SYSTEMS (with software and CCD-camera)

| MOUSE | RAT   |  |
|-------|-------|--|
| 46150 | 46160 | Complete Fear Conditioning system, for 1 animal  |
| 46250 | 46260 | Complete Fear Conditioning system, for 2 animals |
| 46450 | 46460 | Complete Fear Conditioning system, for 4 animals |

### BASIC SYSTEMS (without software and CCD-camera)

| MOUSE | RAT   |   |
|-------|-------|---|
| 46100 | 46110 | Basic Fear Conditioning system, for 1 animal  |
| 46200 | 46210 | Basic Fear Conditioning system, for 2 animals |
| 46400 | 46410 | Basic Fear Conditioning system, for 4 animals |

Single items (e.g. Shocker, Sound Generator, Speakers) parts can be ordered separately on request.

## Bibliography

- P. Bianchi *et al.*: "Early Pharmacotherapy restores neurogenesis and cognitive performance in the Ts-65Dn Mouse Model for Down Syndrome". *The Journal of Neuroscience* (2010), 30(26):8769-8779