# Dynamic Plantar Aesthesiometer

Cat. No. 37450

- Mechanical Stimulation
- Now with larger platform and modular animal cage

**ASSESSMENT OF ANIMAL SENSITIVITY TO LIGHT TOUCH OF THE PAW**

## General

The Dynamic Plantar Aesthesiometer has been designed to assess "**touch sensitivity**" on the plantar surface of the rodents.

Somesthetic (mechanical) stimulation has a long history of effective clinical use to diagnose pathologies of hyper- or hypo-aesthesia, brought about by drugs, neural pathology or experimental lesions, etc., in model and experimental systems using laboratory animals.

## Main Features

- Automatic detection of animal response
- Consistent application of force at an adjustable rate (force ramp)
- Software included as standard
- Data Portability: via the Memory-Key provided with the standard package
- Print-out: by optional panel mount or independent thermal mini-printer

**Ugo Basile: more than 10,000 citations**

The **new model** encompasses:-

- a movable **touch-stimulator unit**, well proven in previous model, complete with filament actuator and adjustable angled-mirror
- a microprocessor controlled **electronic unit,** of new design provided with graphic display, internal memory for data storage, memory stick and optional printer.
- a large **testing surface**
- a new modular **animal enclosure**, offering from 3 to 12 spaces.

## Operation

The animal moves about freely in one of the enclosure compartments, positioned on testing surface.
After cessation of exploratory behaviour, the operator places the touch-stimulator below the target area of the animal paw, using the adjustable angled-mirror to position the filament.

Pressing **START** key provided at both sides of the handle of the touch-stimulator, invokes the following automatic sequence:

a. an electrodynamic actuator of proprietary de sign lifts a straight metal filament;
b. the filament touches the plantar surface and begins to exert an upward force below the th r eshold of feeling;
c. the force increases (at the preset application rate), until a stop signal is attained, either the animal removing the paw or the point at which greatest preset force is met

The actuator filament (0.5mm diameter) produces force over the entire range of all typical aesthesiometer test devices. Paw withdrawal reflex is automatically recorded using two metrics: the latency until withdrawal, in seconds, and the force at which paw was withdrawn, in grams.

## Basic Specifications

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|---|---|
| Starting | via keys on the touch-stimulator vessel |
| Force range | 0 to 50.0 grams, in 0.5 g steps |
| Force increasing rate | adjustable in the interval 1 to 20 seconds, in 1 s steps |
| Filament travel | 12 mm |
| Latency time | read-out on graphic display, in 0.1s steps |
| Connection to PC | through DELTA 9-pin connector |

## Data Acquisition

The 37450 is a microprocessor controlled unit. The experimental data, stored in its internal memory can be directly exported to the PC USB or serial ports.

Communication is managed by the dedicated CUB Data Acquisition Software Package, **Cat. 52050-12**, included as standard. The CUB Windows®-based Software Package enables the user to route the experimental data to the PC and store them into individual files, to be managed by most statistical analysis packages available on the market.
The 37450 is provided with a **memory key**, to record all the experimental data of one or more sessions and to program the experiment layouts from a remote PC.

## Ordering Information

**37450 DYNAMIC PLANTAR AESTHESIOMETER,**
complete with following standard accessories:

| | |
|---|---|
| **37450-001** | Microprocessor controlled electronic unit |
| **37400-002** | Touch stimulator, |
| **37450-003** | Large Platform with supporting columns |
| **37450-005** | Framed testing surface (perforated platform) |
| **37000-006** | Modular animal enclosure (3 to 12 spaces) |
| **37450-302** | Instruction manual |
| **37400-321** | Set of two 0.5 mm diam. stainless-steel filaments and two calibration weights (5 & 50 g) |
| E-AU 041 | Memory Key |
| E-WP 008 | Mains Cable |
| 52050-12 | CUB Data Acquisition Software Packa ge, with USB Connection Cable & USB-to-Serial Converter |
| Set of 2 fuses | |

**OPTIONAL**

| | |
|---|---|
| 37000-145 | Panel-Mount Thermal Printer |
| 57145 | Thermal MiniPrinter |

**PHYSICAL**

| | |
|---|---|
| Universal Mains 85-264 VAC - 50-60Hz - 20 W max. | |
| Total Weight | Kg. 10.20 |
| Shipping Weight | Kg. 18.50 approx. |

## Bibliography


- L. Ramer et alia: "**Rho-Kinase Inhibition Enhances Axonal plasticity and Attenuates Cold Hyperalgesia after Dorsal Rhizotomy**" J. Neuroscience, 24 (48), 10796-10805, 2004
- E. Escribano et alia: "**Rapid Human Skin Permeation and Topical Anaesthetic Activity of a New Amethocaine Microemulsion**" Skin Pharmacol. Physiol., 18, 294-300, 2004
- G. Villetti et alia: "**Antinociceptive Activity of the N-Methyl-D-aspartate Receptor Antagonist N-(2-Indanyl)-glycinamide Hydrochloride (CHF3381) in Experimental Models of Inflammatory and Neuropathic Pain**" J. Pharmacol. Exper. Therap., 306, 804-814, 2003
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