



Plantar Test (Hargreaves's Apparatus)

Cat. No. 37370

For Rats

For Mice

**AUTOMATIC
MEASUREMENT OF THE
ANIMAL'S RESPONSE**

General

Determination of acute nociceptive thermal threshold in laboratory animals has primarily relied upon the tail flick and hot plate methods.

Although both methods are used frequently in pharmaceutical studies, they are not without limitation. In addition, neither method has been extended to investigating behavioural responses to hyperalgesia.

The Plantar Test represents a remarkable advance in methodology, as it combines the best features of all other methods of measuring pain sensitivity. Unique to the Plantar Test, **the animal is unrestrained and unhandled during experiments.**



Main Features

- Automatic detection of paw withdrawal (no visual score needed!)
- I.R intensity adjustable in the interval 10-99 (in one digit steps)
- Optional 37300 Radiometer for calibration
- Data portability via the included memory key
- Software included

Instrument Description

The Instrument basically consists of:-

- a Movable I.R. (infra-red) Source
- a Glass Pane onto which the animal enclosure is located
- a Controller (the picture below shows the optional printer 37000-145 mounted on the top panel)



- a modular enclosure of new design, in which the 3 spaces can be further divided into 2 or 4 by removable partitions, thus obtaining up to 12 spaces

After the acclimation period, the I.R. source placed under the glass floor (see the picture) is positioned by the operator directly beneath the hind paw. A trial is commenced by depressing a key.

When the animal feels pain and withdraws its paw, the I.R. source switches off and the reaction time counter stops. The withdrawal latency to the nearest 0.1 s is automatically determined.

Data Acquisition

The 37370 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. 52050-10**, included as standard or by the 52010 Win-DAS Software.

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 37370 is provided with a **memory key**, to record all the experimental data of one or more sessions and to program the experiment parameters from a remote PC.

Calibration Radiometer

Each Plantar Test Unit is accurately calibrated via an **Heat-Flux I.R. Radiometer Cat. 37300**.

The end user should consider this extremely useful accessory, which enables the experimenter to:

- Make sure that two or more units deliver thermal nociceptive stimuli (expressed in mW per square cm) of **exactly the same intensity**.
- Know the I.R. energy (1 mW for the duration of 1s corresponds to 1 mJ) **in absolute terms**

Ordering Information

37370 Plantar Test (Hargreaves' test), complete with following standard accessories:

37370-001	Plantar Test Controller
37370-002	Emitter/Detector Vessel, complete with cable
37370-003	Platform, complete with supporting columns
37000-006	Modular Animal Enclosure
37370-005	Framed Glass Pane
37370-302	Instruction manual
E-HR 002	Spare Bulb
E-WP 008	Mains Cable

Physical

Dimensions (assembled)	85 x 40 x 35 cm
Weight	13.00 Kg
Shipping Weight	27.50 Kg approx

Bibliography

Method Paper:

- D.C. Yeomans & H.K. Proudfit: "**Characterization of the Foot Withdrawal Response to Noxious Radiant Heat in the Rat**" *Pain* 59: 85-97, 1994.
- K.M. Hargreaves, R. Dubner, F. Brown, C. Flores and J. Joris: "**A New and Sensitive Method for Measuring Thermal Nociception in Cutaneous Hyperalgesia.**" *Pain* 32: 77-88, 1988.

Papers mentioning UB model:

- Mark J. Field et alia: "**Detection of Static and Dynamic Components of Mechanical Allodynia in Rat Models of Neuropathic Pain: Are They Signalled by Distinct Primary Sensory Neurons?**" *Pain* 83: 303-311, 1999
- Fred Lembeck: "**Epibatine: High Potency and Broad Spectrum Activity on Neuronal and Neuromuscular Nicotinic Acetylcholine Receptors**" *Nauyn-Schmiedeberg's Arch. Pharmacol.* 359:378-385, 1999
- Hartmut Buerkle et alia: "**Experimental Arthritis in the Rat Does Not Alter the Analgesic Potency of Intrathecal or Intraarticular Morphine**" *Anesth. Analg.* 89: 403-408, 1999.