Tail-Flick Unit

Cat. No. 37360

Dedicated Software

Memory Key included

RAPID and PRECISE SCREENING OF ANALGESIC DRUGS ON THE RAT TAIL

General

This new style Tail Flick Unit has been designed to perform rapid precise screening of analgesic drugs on the rat tail, **according to D'Amour & Smith**, see bibliography. It basically consists of an I.R. source (50W bulb), whose radiant energy of adjustable intensity is focused by an embodied parabolic mirror on the rat tail.
The rat is held by the operator on the instrument unob-structed upper panel (see picture) in such a way that its tail, placed over a flush mounted window, receives the I.R. energy.
The operator starts the stimulus and the related solid state second counter. When the rat feels pain and **flicks** its tail, a sensor detects it, stops the second counter and switches off the bulb. The **reaction time** of the animal is thus determined.

Main Features

- Automatic detection of the animal response
- Data portable to memory stick or to PC (USB)
- Comfortable, unobstructed working surface (no protruding elements)
- Excellent reproducibility due to: optics lodged into a rigid structure & electronically controlled I.R. flux

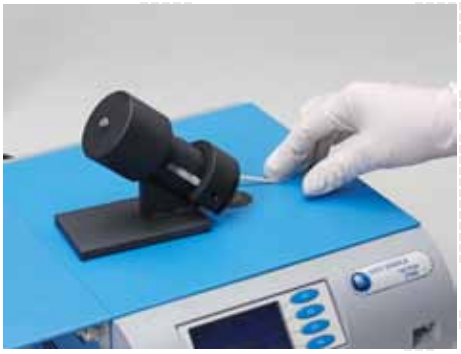
Instrument Description

The instrument components are neatly arranged in a box of new design, which contains the I.R. source, the sensor, the microcontroller and the electronic circuit.

When the counter stops, the **display** remains frozen on the indicated time.

An inclined **Mouse Restrainer** is supplied as **optional,** to be used with the mouse to compensate for its tendency to hold its tail at 45 degrees up and therefore away from the heat source.

In fact, the availability of **mice** with specific gene(s) knock-outs is driving a substantial shift from rats to mice as a re-search animal of first choice.



Data Acquisition

The 37360 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. 52050-09**, 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 37360 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.

Calibration Radiometer

Each Tail Flick Unit is accurately calibrated via an **Heat-Flow I.R. Radiometer Cat. 37300.**
The end user should consider this extremely useful accessory, which enables the experimenter to:
i) Make sure that two or more units deliver thermal no-ciceptive stimuli (expressed in mW per square cm) of **exactly the same intensity.**
ii) Know the I.R. energy (1 mW for the duration of 1s corresponds to 1 mJ) in **absolute terms**

Basic Specs.

I.R. Intensity	adjustable in the interval 10-99 (in one digit steps)
Reaction Time	three digits, 0.1s steps
Calibration	via appropriate I.R. Radiometer

Physical

Dimensions	cm 43x22x10
Weight	Kg. 5.80
Shipping Weight	Kg. 13.00 approx.

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Method Paper:

- F.E. D'Amour & D.L. Smith: "**A Method for Determining Loss of Pain Sensation**" J. Pharmacol. Exp. Therap. 72: 74-79, 1941

Papers Mentioning UB models:

- C. Dawson et alia: " **Dexmedetomidine Enhances Analgesic Action of Nitrous Oxide"** Anesthesiology 100 (4): 894—904, 2004
- P. Tolu et alia: " **Effects of Long-Term Acetyl-L-carnitine Administation in Rats: I. Increased Dopamine Output in Mesocorticolimbic Areas and Protection Toward Acute Stress Exposure**" Neuropsychopharmacol. 27 (3): 410-420, 2002
- R. Nadeson et alia: " **Potentiation by Ketamine of Fentanyl Antinociception. I. An Experimental Study in Rats Showing that Ketamine Administered by Non-Spinal Routes Targets Spinal Cord Antinociceptive Systems**" Br. J. Anaesthesia 88 (5): 685—691, 2002
- L. Jasmin et alia: " T**he NK1 Receptor mediates Both the Hyperalgesia and the Resistance to Morphine in Mice Lacking Noradrenaline**" PNAS 99 (2): 1029—1034, 2002

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