

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 via heat stimulation on the rat tail, **according to D'Amour & Smith**, see bibliography. It basically consists of an I.R. source, whose radiant energy of adjustable intensity is focused on the rat tail by an embodied parabolic mirror.

The rat is held by the operator on the instrument unobstructed 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 and automatically recorded.



Main Features

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

Ugo Basile: more than 10,000 citations

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. Latency time is thus automatically recorderd.

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 research 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.

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 nociceptive stimuli (expressed in mW per square cm) of **exactly the same intensity**.
- ii) Know the I.R. energy (1mW for the duration of 1s corresponds to 1mJ) in **absolute terms**

Ordering Information

37360	TAIL-FLICK UNIT , complete with following standard accessories:-
37215-303	Pedal Switch, complete with cable
37360-302	Instruction Manual (on USB key)
52050-09	CUB Software (on USB key)
52010-323	USB cable
E-WP008	Mains Cord

Accessories and Optionals

57145	MiniPrinter
37300	Heat-Flux I.R. Radiometer
E-HR 002	Replacement Bulb
37360-325	Mouse Holder, 25mm diam.
37360-330	Mouse Holder, 30mm diam.

Basic Specifications

I.R. Intensity	adjustable in the interval 01-99 (in one digit steps)
Reaction Time	three digits, 0.1s steps
Calibration	via appropriate I.R. Radiometer
Universal Mains 85-264 VAC - 50-60Hz - 20 W max.	

Physical

Dimensions	43x22x10cm
Weight	4.0 Kg
Packing	45x34x26cm
Shipping Weight	5.8 Kg approx.

Bibliography

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 model:

- T.O. Lilius et alia: "The Mineralocorticoid Receptor Antagonist Spironolactone Enhances Morphine Antinociception" *Eur. J. of Pain* online view, **2013**
- J.W. Little et alia: "Spinal Mitochondrial-Derived Peroxynitrite Enhances Neuroimmune Activation During Morphine Hyperalgesia and Antinociceptive Tolerance" *Pain* 154 (7): 978-986, **2013**
- P.J. McLaughlin et alia: "The Mineralocorticoid Receptor Antagonist Spironolactone Enhances Morphine Antinociception" *Eur. J. of Pain* online, **2013**
- T.A. Kosten et alia: "A Morphine Conjugate Vaccine Attenuates the Behavioral Effects of Morphine in Rats" *Progr. in Neuro-Psychopharmacol. and Biol. Psychiatry* 45: 223-229, **2013**
- J. Walsh et alia: "Disruption of Thermal Nociceptive Behaviour in Mice Mutant for the Schizophrenia-Associated Genes NRG1, COMT and DISC1" *Brain Res.* 1348: 114-119, **2012**