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TRANSFORMING IDEAS INTO INSTRUMENTS

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e-VF

ELECTRONIC VON FREY

Cat. No. 38450

General

Ugo Basile introduces an electronic apparatus for applying light touch to the rodent foot, the **e-VF, Electronic Von Frey**.

A touch stimulator transducer is mounted on a Perspex bar so that routine procedures may be employed to examine and test the animal skin sensitivity. A **prism** of proprietary design is a useful tool to locate and aim the stimulation area.

The completion of each test may be indicated either by the sudden release of the paw or by pressing the external foot-pedal. The display then gives the operator a summary of the results of the test (i.e. force and time corresponding to the animal response).

The operator may choose to reject the results or to accept them, in which case they are recorded in the e-VF internal memory. The results of several hundred tests may be stored in the e-VF for transfer them to a PC when convenient.

The rate of application of the force is set by the operator and the e-VF includes software tools that help in consistently applying the force at the desired rate.

Sensitivity

Allodynia

ASSESSMENT OF HYPERSENSITIVITY IN RATS & MICE

Main Features

- Maximum Applicable Force: 1000g
- Resolution: 0.1g
- Automatic recording of animal response
- User-controlled application of force rate
- Location of the target via the original prism-design

Ugo Basile: more than 10,000 citations

Rationale of the technique

Impaired cutaneous sensation is usually first make evident to the eye in a loss of light-touch detection. The Electronic Von Frey was developed to quantify the sensitivity to light touch in the laboratory animal.

The classic instrument for test of touch sensitivity is the **Semmes-Weinstein set of Von Frey Hairs**, i.e., 20 monofilaments in a linear scale of physical force. The hair is pressed against the skin, the force applied increases with increasing hand pressure, until the hair bends. Once the hair is bent, increasing hand approach causes further bend, but negligible additional force on the skin. In this way, a given filament always applies the same force, not subject to variation by the energy of the operator.

The Semmes-Weinstein set can be used on rodents (which respond to light touch of the paw, if they feel it, by a paw withdrawal reflex).

However, the involved procedure is tedious and time-consuming because several stimulations must be performed for a single test (i.e., a different filament for each force level).

Compared to the classic Von Frey Hairs, the **Electronic Von Frey device (e-VF)** has the advantage of ensuring a continuous force application along the whole force range of the sensor (i.e., 0-1000g), by using a single rigid metal tip.

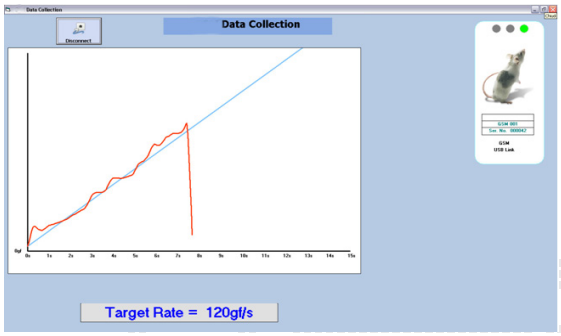
Moreover, the metal tip used in the e-VF is the same as the one used in the classic **Ugo Basile Dynamic Plantar Aesthesiometer** (PN 37450), allowing consistent comparison of results among the two instruments.

Fig. 1: "touch stimulator" transducer, including prism
Grid mesh not included (optional)

Ease of use

The e-VF device has been designed to make sensitivity experiments easy and consistent, thanks to its:

- Effective **peak detector,** for a reliable and automated detection of the animal response
- **Ratemeter** and **Slope** feature (see fig. 3), ensuring the desired force is applied at a consistent rate



- **Software,** acting as a quality control tool, which shows the applied force (red line) and the desired target force (blue line) in real time.

Instrument configuration

The e-VF comes as a complete package including **touch stimulator transducer** with **prism**, **electronic unit** with power supply, foot pedal, **software** & **USB** cable**.** The mesh grid with platform, shown in figure 1, is an optional.

Fig. 2: electronic unit, usb cable and foot pedal

Ordering Information

38450	**e-VF, Electronic Von Frey**, complete with following standard parts
38450-001	Electronic Unit, with power supply
38450-004	Touch-Stimulator Transducer with
38450-310	Prism
38450-302	Instruction Manual (on CD)

All components lodged in a dedicated plastic case

Options

37450-005	Perforated Metal Sheet for plantar stimulation
37450-278	Base assembly for plantar stimulation, with perforated metal sheet & animal enclosure

Physical

Weight	1.4Kg
Shipping Weight	2.7Kg
Packing	46x38x27cm