Приборы исследования на боль и анальгезию

Описание

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Dynamic Weight Bearing Test

The Dynamic Weight Bearing - New Incapacitance Test, assesses spontaneous pain in freely moving rodents, and is based on an instrumented-floor cage and a combined video acquisition system.

- Operator-independent
- Time-saving
- Convenient for manipulating large amounts of rodents
- No stress induced on the animal (rat or mouse)

Item No.	Description
76-0728	Dynamic Weight Bearing Test, Rat
76-0718	Dynamic Weight Bearing Test, Dual for Rat and Mouse
76-0719	Replacement Pad, Rat
76-0493	Replacement Pad, Mouse



The Dynamic Weight Bearing - New Incapacitance Test, assesses spontaneous pain in freely moving rodents, and is based on an instrumented-floor cage and a combined video acquisition system. The Dynamic Weight Bearing test, especially suitable for research on Parkinson and allodynia, was a major break-through in the field of research on analgesia: operator-independent, time-saving, convenient for manipulating large amounts of rodents, and induces no stress on the animal (rat or mouse). The system has been used extensively by many customers from private firms to academic labs since 2008 for various types of research on analgesia and nociception.

The Dynamic Weight Bearing system also offers the possibility of conducting the experiment over a longer observational period (5 minutes) without an operator (thus reducing stress on the animal), and without any habituation period. With these exclusive features, the DWB opens a new and improved generation of instruments for drugs screening and optimization of preclinical models. The latest version is now a semi-automatic, operator-independent instrument.

Operating principle

Performing the same measurements as the original manual Version, the Advanced DWB (Dynamic Weight Bearing) improves two of the turnkey points of the system: the speed of operation and the operator independent factor. The Advanced DWB allows the user to reduce the most important phase of

the process by a factor of 8 to 10, thus the analysis of 1 animal will take 1 to 2 minutes and be operatorindependent.

The results encompass a lot of valuable information but will ask for a minimum of manpower and many more animal analysis can be done in the same amount of time than with a manual instrument. The software gives the weight distribution of the animal (rat or mouse), per limb, with additional ratio computations and filtering options.

Analysis and replay can be performed on site or remotely using Bioseb's exclusive software for Dynamic Weight Bearing and Incapacitance tests. During the analysis and replay, the operator can check and secure each limb recognition for hind and front paws. The weight distribution of the animal (rat or mouse) per limb is then shown in the result window, for each time period with the mean and the variation coefficient.

Parameters measured

- Weight for each paw (g and % total animal weight)
- Weight for grouped front and rear paws (g and %total animal weight)
- Left/Right and Front/Rear weight ratio
- Surface for each paw (mm²)
- Surface for grouped front and rear paws (mm²)
- Variability (standart deviation/mean) for each parameter
- Parameters are given for each posture and as a mean for the whole experiment
- Duration of different postures (4 paws, rearing, etc.) over the whole experiment(s)
- Total time spent on each paw over the whole experiment(s)

Electronic Von Frey

NEW! A new version of the Electronic Von Frey with embedded video (EVF5)

The electronic model of Von Frey filament combines ease of use and rapidity for the determination of mechanical sensitivity thresholds in rodents.

- New embedded Video option
- Easy-to-use, ergonomic handle
- Provides objective and accurate data
- The threshold value can be obtained in only one test, and in a highly reproducible manner
- Elimination of the problems of filament standardization
- Stimulation of areas of equal size
- The end-point value is automatically recorded
- Realtime force curves (software)

Item No.	Description
76-0976	EVF4S Electronic Von Frey, basic with hard and soft tips, footswitch, casing and BIO-CIS software
76-0975	EVF4 Electronic Von Frey package complete with hard and soft tips, footswitch and casing (without software)
76-0977	EVF5 Electronic Von Frey, 0-500g, with Video Camera, incl. Analysis software
76-0978	EVF5 TABLET, Electronic Von frey EVF5, 0-500g, with Video Camera,Tactile tablet PC, incl. Analysis software
76-0789	Accessory: Elevated stand with metal mesh, deliv- ered without cage, fits up to 3 animal enclosures 76-0788
76-0788	Accessory: Robust animal enclosure for 2 rats or 6 mice for VF stand or heargreaves test

Item No.	Description
76-0488	Spare: Hard plastic tips, 10 units
76-0489	Spare: Elastic (spring) tips, 1 unit
76-0779	Tips Replacement Box (10 Hard Plastic Tips, 1 Spring Tip and 3 Dust Disks)
76-0636	Accessory: Patient switch for clinical research pro- tocols (needed for clinical units)
76-0741	BIO-CIS Software, incl. RS232/USB cable



NEW! A new version of the Electronic Von Frey with embedded video (EVF5)

The electronic model of Von Frey filament combines ease of use and rapidity for the determination of mechanical sensitivity thresholds in rodents.

Description

The Von Frey filament is applied against the central edge of the animal hind paw. Paw withdrawal caused by the stimulation is registered as a response. The corresponding force applied is recorded by the system and displayed on the large backlighted screen of the Von Frey unit with a resolution of 0.1 grams. A different tip is used for rat (hard plastic tip) and mice (elastic spring tip).

The Electronic Von Frey EVF4 and EVF5 are equipped with batteries. It allows performing measurement for several hours without connection to power supply.

Differently to the procedure using classical Von Frey filaments, the threshold value can be obtained in only one test, and in a highly reproducible manner. The electronic instrument does not present any temperature or hygrometry drift, which used to be an issue with the manual version of the filaments.

Electronic Von Frey 4

The Electronic Von Frey EVF4 is provided with a easier and more comfortable handle (when compared to the EVF3 version).

The BIO-CIS software can be used to automatically record the results on a PC through a RS 232 port (direct Excel exportation). The BIO-CIS software can also be used for increasing the repeatability of nociceptive tests: while recording the reflex respond the software help the operator to improve his skills with the instrument, as well as to invalidate off-limit results. A brand new function also allows you to import all data from a wide range of instruments directly into Excel for further analysis!

Two packages are available: EVF4 (without software) and EVF4S (including the software).

Component included

- Control unit
- Stimulus handle
- Hard (10 units) and soft (1 unit) tips for rat and mouse
- Dusk protection disk
- Footswitch
- Storage casing
- BIO-CIS Software (only included in 750976 EVF4S)

Stand and enclosure have to be purchased separately.

Electronic Von Frey 5

The new Electronic Von Frey EVF5 version provides an embedded camera mounted on the handle in order to make easier the visualization of the point of stimulation.

The brand new BIOEVF software comes with a lot of new features :

• Video with target pointer: No more stretching to target the paw

- Real-time curve display: immediate display of applied force, which helps for replicable measures
- Value assignation to each animal's paw: Special 1 touch (or 1 click) validation feature for touchscreen PC.

Two packages are available: EVF5 and EVF5Tablet.

Components included

- Control unit
- Stimulus handle mounted with a camera
- Hard (10 units) and soft (1 unit) tips for rat and mouse
- Dusk protection disk
- Footswitch
- Storage casing
- BIOEVF Software
- Tablet (only included in 750978 EVF5-TABLET)

Stand and enclosure have to be purchased separately.

SPECIFICATIONS

Specifications	76-0976	76-0975	76-0977	76-0978
Measurement range	0 to 500 g (5N), 120% overload allowed without causing any damage to the sensor	0 to 500 g (5N), 120% overload allowed without causing any damage to the sensor	0 to 500 g (5N), 120% overload allowed without causing any damage to the sensor	0 to 500 g (5N), 120% overload allowed without causing any damage to the sensor
Precision	Resolution: 0.1 g; Accuracy: 0.2 g			
Temperature compensation	from 0 to 50°C			
Statistical functions	Average value and standard deviation are computed for each subject			
Internal Memory	up to 100 values			
Power supply	220-240 V (other voltages on request)			
Weight	6,5kg	6,5kg	6,5kg	6,5kg

Specifications	76-0976	76-0975	76-0977	76-0978
Software Included	Yes	No	Yes	Yes
Software	BIO-CIS	BIO-CIS (to be purchased separately)	BIOEVF Software	BIOEVF Software
Video Option	No	No	Yes	Yes
Video Resolution	N/A	N/А	640x480	640x480
Video Frame Rate	N/A	N/А	30 fps	30 fps
Video Sensor	N/A	N/A	1/3.7â€⊠ lens 1.39mm F2.4	1/3.7â€⊠ lens 1.39mm F2.4
Tablet Included	No	No	No	Yes
760788 Enclosures Dimensions (W x D x H)	Mouse: 6 compartments, 11 cm x 7 cm x 14 cm each	Mouse: 6 compartments, 11 cm x 7 cm x 14 cm each	Mouse: 6 compartments, 11 cm x 7 cm x 14 cm each	Mouse: 6 compartments, 11 cm x 7 cm x 14 cm each
	Rat: 2 compartments, 22 x 11 x 14 cm each			
760789 Stand with Mesh Floor Dimensions	100 cm W x 50 cm D x 30 cm H	100 cm W x 50 cm D x 30 cm H	100 cm W x 50 cm D x 30 cm H	100 cm W x 50 cm D x 30 cm H

Hot Plate Analgesia Meter (Panlab)

For a rapid and precise screening of analgesic drug properties on small laboratory animals accoridng to the hot-plate test.

- Digital set point
- Built-in electronic timer
- Foot switch timing operation
- Optional Data Transfer software SEDACOM 2.0

Item No.	Description
76-0113	(LE7406) Hot Plate Thermal Analgesia Meter
76-0406	SEDACOM Software V2.0



The Hot Plate performs rapid and precise screening of analgesic drug properties on small laboratory animals according to the hot-plate test.

In the 76-0113/LE7406 Hot Plate, a thick aluminium plate (10 mm) provides a high temperature stability and even surface distribution. The plate temperature can be held at a set point between 45 and 62°C (± 0.1°C) by multiple proportional feedback circuits that minimize overshoot. A built-in timer activated by an external foot switch allows precise measurement of reaction time (0.1 sec precision). A remote foot-switch controls the test start/stop allowing rapid hands-free experiments. The operator can read the animal reaction time from the display or from a PC computer using the SEDACOM software.

The optional SEDACOM software (new version 2.0 available) offers an easy and convenient way to visualize and export the data (Trial number, plate temperature, reaction time etc.) on a computer for further analysis.

Hot/Cold Plate Analgesia Meters

The Hot/Cold Plate Analgesia Meter is an innovative instrument opening new investigation fields for your analgesia research by allowing you to test animal's sensitivity to pain resulting from exposure to heat or cold.

- Simple to use, fast and accurate
- Can be used as a stand-alone instrument
- Allows testing of sensitivity to both hot and cold stimulus
- Unmatched temperature stability and control for both heat and cold
- Fast reach to set temperatures
- Homogeneous temperature surface
- Practical foot switch timing operation
- Optional Ramp software will allow the user to define temperature ramps and loops (slope in $\hat{A}^{\circ}C/min$, start and end points) and store results

Item No.	Description
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76-0112

Hot/Cold Plate Including BSRamp Software



The Hot/Cold Plate Analgesia Meter is an innovative instrument opening new investigation fields for your analgesia research by allowing you to test animal's sensitivity to pain resulting from exposure to heat or cold.

The Hot/Cold Plate Analgesia Meter is based on a metal plate which can be heated to 65°C and cooled to -3°C (with an ambient temperature between 20°C and 25°C). An electronic thermostat maintains the plate's temperature and a front panel digital thermometer displays the current plate temperature.

Pain sensitivity resulting from exposure to heat or cold is tested by placing the animal on the surface of the plate and starting a built-in timer. The operator stops the timer at the instant the animal lifts its paw from the plate, reacting to the discomfort. The front panel timer then displays the number of seconds the animal took to react. Animal reaction time is a measurement of animal resistance to pain and is used to measure efficacy of analgesics.

The plate is very simple to use and reaches the set temperature quickly. (For example, the plate goes from ambient to 4°C–the most used threshold value, in less than 10 minutes, or from 4°C to 65°C in only 5

minutes). It is accurate to less than 0.5°C (EEC metrology standard) and perfectly constant in the animal holder system. The preset temperature will not change more than 0.1°C when a 400g rat is placed on the plate, and return to the set temperature is almost immediate.

The instrument can be adjusted to be used for TEMPERATURE RAMPS. Ramps are predefined by the user nd most often part of telemetry implant studies. In addition to displaying the reaction time, the Cold/Hot Plate Analgesia Meter can send the same information via USB interface to a computer.

The operator can start and stop the timer with the front panel start/stop switch or with the included footswitch, which allows hands-free operation.

SPECIFICATIONS

Specifications	76-0112
Temp range	-2 degrees C. to 55 °C (in 20 to 25 °C. ambient environment, 50% RH)
Temp accuracy	+/- 0.5 d°C.
Temperature uniformity on plate	+/- 0.5 °C.
Power requirements	110V/220V automatic, 100W
Plate Dimensions	165 x 165 mm
Control unit dimensions	305 x 280 x 158 mm
Weight	6,650 kg

Incapacitance Meter (Static Weight Bearing Test)

The Incapacitance Test offers an unsurpassed method for assessing spontaneous pain in laboratory animal models with inflammation or nerve injury in one hind paw (neuropathy, carrageenin, incision).

- Assess spontaneous pain in absence of the application any experimental noxious or nonnoxious stimulus
- Specially designed animal holders (mouse and rat) to get relevant results in a more rapid manner
- Data given using user selected unit (grams, Newton, oz/lbs)
- Easy and precise instrument

Item No.	Description
76-0115	(LE7900) Incapacitance Test Sensor
76-0117	(LE7930) Incapacitance Test Holder, Rat
76-0116	(LE7920) Incapacitance Test Holder, Mouse
76-0118	(LE7950) Incapacitance Test Control Unit
76-0406	SEDACOM Software V2.0



The Incapacitance Test (static weight bearing test) offers an unsurpassed method for assessing spontaneous pain in laboratory animal models with inflammation or nerve injury in one hind paw (neuropathy, carrageenin, incision). Classic measurements of nociceptive thresholds, as used in most of the experimental studies, allow assessment of a pain sensitivity level, (not a spontaneous pain level), in the absence of experimental nociceptive stimuli.

In the Incapacitance Test, the animal is located in a holder specially designed to maintain the animal comfortably positioned on two separated sensor plates. The Panlab Incapacitance Tester allows quantification of the spontaneous postural changes reflecting spontaneous pain by independently measuring the weight that the animal applies to each hind paw on two separate sensors. In the absence of hind paw injury, rats applied equal weight on both hind paws, indicating a postural equilibrium. After unilateral hind paw tissue injury, a change in the weight distribution on the sensor can be detected, with a lower weight applied by the injured paw.

The current value of the weight applied on each sensor cell is shown on the LCD display of the LE7950 control unit in a user-selected unit (grams, Newton or oz/lbs). A remote foot-switch controls the test start/stop allowing rapid hands-free experiments. The control unit also allows to compute and display statistics (mean, sd) for the groups of animals under test during the measurements. No PC is required for running the Incapacitance Test, although the possibility is given to send collected data from the

instrument to a PC through the integrated RS232/USB interface and SEDACOM.

The new SEDACOM 2.0 version (optional) provides an easy and convenient way to visualize and export the data on a computer for further analysis.

SPECIFICATIONS

Specifications

76-0118

Accuracy	0.2% F.S.
Average	1 to 300 seconds
Overpressure	2000 gr
Control Unit Dimensions	17 x 25 x 10 cm
Communications	USB

Pincher Test

The "Rodent Pincher" algometer allows calibrated forceps to induce quantifiable mechanical stimulation in the animal (rats or mice) on a linear scale.

- More ethical handling, less stressful for the animal (rat or mouse) resulting in less variable measurements
- Faster measurement, less traumatic for the tissues
- Digital measurement with metrological traceability

Item No.	Description
76-0738	Electronic Pincher, Rat
76-0737	Electronic Pincher, Mouse
76-0741	BIO-CIS Software, incl. RS232/USB cable



The Rodent Pincher algometer allows calibrated forceps to induce quantifiable mechanical stimulation in the animal (rats or mice) on a linear scale.

The most suitable protocol was experimented by determining the effects of 3 repetitive measurements on the 2 hindpaws, respectively over long-term (9 days), mid-term (1 day) and short-term (2 hours). It was primarily developed as an analgesimeter/algometer (analgesia measurement instrument) for nociceptive tests. In this specific use, the Rodents Pincher not only represents an alternative to the RANDALL & SELITTO test - but also presents the following advantages when compared to the classical test:

- More ethical handling, less stressful for the animal (rat or mouse) resulting in less variable measurements
- Faster measurement, less traumatic for the tissues
- · Digital measurement with metrological traceability

Furthermore, this pincher-based analgesia meter can also be used for other applications that require a controlled force or pressures values, for example :

Sensitivity recovery after nerve crush: pinching is applied at several places over the paw to see the sensitivity recovery

- Mechanical injuries for thrombotic models
- Mechanical stimulation for in vivo electrophysiological recordings using the possibility to trigger recording on force thresholds

Comparative studies (including comparative tests with the RANDALL & SELITTO analgesimeter) have demonstrated the accuracy of this pincher-based algometer for easy, fast and reproducible measurement of mechanical pain threshold on rat limbs. Moreover, it allowed to perform rat analagesia testing with minimal constraint, which reduces data variability.

Operating principle

The pressure is applied in the inter-digital region. When used on the rat the pressure can also be applied to the tail. The instrument displays the force (in grams, newton, oz, lbs) at which the animal reacts and reports the nociception threshold.

Individual pain threshold measurements (up to 100) are stored in the internal memory, and can be downloaded post experiment. Recently an embedded statistical computation has been included in the electronic device of the algometer. This is a very useful feature that has been very well received and used by users of large numbers of tests. The display shows in real time the mean, standard deviation and variation coefficient from groups of animals (rats or mice). This feature also allows the user to cancel any analgesia test incorrectly performed.

Plantar Test (Hargreaves' Method) Analgesia Meters

The Plantar Test (Hargreaves' Method) enables the researcher to discern a peripherally mediated response to thermal stimulation caused by drugs in rodents.

- Automatic detection of paw withdrawal (no visual score needed!)
- Validity unaffected by repeated testing
- I.R. intensity adjustable in the interval 01-99 (in one digit steps)
- Modular animal enclosure, from 3 to 12 spaces, conveniently designed to restrain mice or rats
- Software included
- Data portability via the included memory key
- Each animal can serve as its own control

Item No.	Description
72-6692	Plantar Test, complete
72-6703	Heat-Flux Infrared Radiometer, Standard Package



The Plantar Test (Hargreaves' Method) enables the researcher to discern a peripherally mediated response to thermal stimulation caused by drugs in rodents.

Description

The Instrument basically consists of:

- a Movable I.R. (infra-red) Source
- a Controller
- a framed Glass Pane (86x35cm) supported by columns on a base latform onto which the movable source glides
- a modular enclosure of new design, in which the 3 spaces can be further divided into 2 or 4 by removable partitions, 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 started by depressing a key on the I.R. source.

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 0.1s is automatically determined and recorded.

Data Acquisition

The Plantar test has 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 Windows®-based Software Package, included as standard, which 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 Plantar test 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.

The end user should consider this extremely useful optional 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.
- Measure the I.R. energy (ImW for the duration of 1s corresponds to 1mJ) in absolute terms

SPECIFICATIONS

Specifications	72-6692
Calibration	Via appropriate I.R. Radiometer
Certifications	CE
Connection to PC	Through DELTA 15-pin connector
Dimensions, H x W x D English	33.5 x 15.7 x 13.8 in
Dimensions, H x W x D Metric	85 x 40 x 35 cm
Infared Bulb	Halogen "Bellaphot", Mod. 64607 OSRAM, 8 V - 50 W
Infrared Intensity	Adjustable in the interval 10 to 99 (in one digit steps)
Model	7370/115V
Operating Temperature Metric	15
Power Requirement	230-115 V, 60-50 Hz, 60 VA maximum
Reaction Time	Three-digit LED display, 0.1 second steps
Shipping Weigh English	60.6 lb approx.
Shipping Weigh Metric	27.50 kg approx.
Starting	Via keys on the I.R. Vessel. Additional key on the controller panel

Specifications	72-6692
Weight English	28.7 lb
Weight Metric	13.00 kg

Plethysmometer (Panlab)

The Digital Water Plethysmometer is designed to provide a highly useful tool in the measurement of small volume changes. This test is typically used to follow the evolution of the inflammatory response experimentally induced in rodents and to screen potential anti-inflammatory or anti-oedema properties of pharmacological substances.

- Automatic zero adjustment
- Check-solution status button
- Foot-switch control
- New optional Data Transfer software SEDACOM 2.0

Item No.	Description
76-0220	(LE7500) Digital Water Plethysmometer (cell, cali- brator and software provided separately)
76-0221	(LE7504) 1 ml Cell with Electrode
76-0223	(LE7503) 3 ml Cell with Electrode
76-0222	(LE7505) 5 ml Cell with Electrode
76-0406	SEDACOM Software V2.0
76-0114	(LE7000) Thermal Printer
76-0225	(LE75301) Replacement - 1 ml Calibrator for Plethysmometer
76-0226	(LE75303) Replacement - 3 ml Calibrator for Plethysmometer
76-0436	Replacement - 5 ml Calibrator for Plethysmometer

Item No.

Description

76-0224

(LE7506) Replacement- Platinum Electrode



DETAILS

The Digital Water Plethysmometer is designed to provide a highly useful tool in the measurement of small volume changes. This test is typically used to follow the evolution of the inflammatory response experimentally induced in rodents and to screen potential anti-inflammatory or anti-oedema properties of pharmacological substances.

Basically, the volume transducer is formed by two Perspex tubes interconnected and filled with a conductive solution and a platinum electrode for each chamber. All the system is supported by a stand (included) that can be placed over the control unit.

The water displacement produced by the immersion of the animal paw in the measuring tube is reflected into the second tube, inducing a change in the conductance between the two platinum electrodes. The Plethysmometer Control Unit detects the conductance changes and generates an output signal to the digital display indicating the volume displacement measured (0.01 ml resolution). The current value remains in the digital display until a new trial starts. The Control Unit is automatically zeroed between

successive readings, thus making intermediate adjustments unnecessary.

A remote foot-switch allowing rapid hands-free experiments can be used to set control the end point of the measurement.

The optional SeDacom software (new version 2.0 available) can be used and represents an easy and convenient way to visualize and export the data on a computer for further analysis.

SPECIFICATIONS

Specifications	76-0221	76-0223	76-0222
Specie	Mouse	Rat	Rat
Control Unit Dimensions (WxDxH)	280 x 280 x 110 cm	280 x 280 x 110 cm	280 x 280 x 110 cm
Stimulation Unit Dimensions (WxDxH)	230 x 220 x 300 cm	230 x 220 x 300 cm	230 x 220 x 300 cm
Power Supply	220/110V, 50/60Hz	220/110V, 50/60Hz	220/110V, 50/60Hz
Resolution	3 digits; 0.01 steps	3 digits; 0.01 steps	3 digits; 0.01 steps
Cell Volume	1 ml	3 ml	5 ml
Cell Inner Diameter	12 mm	20 mm	24 mm

Paw and Tail Pressure Meter - Randall Selitto

The Tail/Paw pressure test is based on determination of the animal threshold response to pain induced on the paw or on the tail by the application of uniformly increasing pressure.

- Digital display
- Pressure increasing rate adjustment
- Foot-switch control
- Optional data transfer software SEDACOM 2.0

ltem No.	Description
76-0234	(LE7306) Paw and Tail Pressure Analgesia Meter
76-0406	SEDACOM Software V2.0



The Panlab LE7306 paw & test pressure meter is used for performing the Randall & Selitto test in rodents.

Description

This test is based on determination of the animal threshold response to pain induced by the application of a uniformly increasing pressure on the paws or the tail.

This test can be used on both rats and mice. On rat, it is commonly used for paw pressure. On mice, it is commonly for tail pressure. It is possible to use this test on mice paw but it's moer challenging so the experimenter needs to be particularly skilled.

In the LE7306 paw & paw pressure model, a stimulation unit allows the gradual and constant increase (at selectable rates) of the pressure applied on the animal paw or tail. The pressure increase is achieved by a step-motor inducing the progressive advancement of a sliding support with a distal tip.

The motor and tip are mounted on a pivoting stand preventing any excess pressure on the animal paw. The Control Unit makes possible the adjustment of the force transducer, balance and reset, as well as the selection of the step-motor current speed.

Included accessories

The pressure meter is provided with 2 tips (1 pointed tip and 1 flat tip). The different tips are used for changing the dimension of the area of the mechanical stimulation. Both tips can be used in rats or mice or on the paw or the tail.

A remote foot-switch controls the motor turn on/off allowing rapid hands-free experiments. An automatic mechanism is activated once the distal extreme of the sliding support track is reached or when the pedal is released at the test ending point. Then, the motor reverse its rotation at its higher speed, sliding up the conic tip again.

Software

The optional SeDacom software 2.0 can be used and represents an easy and convenient way to visualize and export the data on a computer for further analysis. The SEDACOM software has to be purchased separately.

SPECIFICATIONS

Specifications	76-0234
Catalog Pages	G33
Certification	CE
Computer Requirements	Windows 95, 98, ME, NT, 2000, and XP
Control Unit Depth	350 mm
Control Unit Height	130 mm
Control Unit Width	350 mm
Material Composition	Methacrylate
Maximum Number of Stations	1 per computer (multiple sets availble by request)
Maximum Stimuli	999 gram
Model Number	LE7306
Power Requirements	110/220V, 50/60Hz

Specifications	76-0234
SeDaCom Included	Yes
Simulation Unit Depth	210 mm
Stimulation Unit Height	166 mm
Stimulation Unit Width	150 mm
Stimuli Resolution	1 gram

Rodent Holders (Panlab)

Panlab Holders for rodents are commonly used in behavioral experiments involving animal contention, immobilization or a limitation of the animal movements/displacements, such as non-invasive blood pressure, tail-flick and startle reflex tests.

- Perpex cylinders
- Sliding doors
- Slot for the tail
- Available in 6 different sizes

Item No.	Description
76-0183	Holder, Mouse (15 to 25 gr)
76-0184	Holder, Mouse (25 to 40 gr)
76-0185	Holder, Rat (150gr)
76-0186	Holder, Rat (250gr)
76-0187	Holder, Rat (400gr)
76-0188	Holder, Rat (500gr)
76-0675	Holder for Startle Reflex, Mouse up to 25 g, 90 x 30 mm (L x D)
76-0235	(LE117M) Holder for Startle Reflex, Mouse up to 35 g, 100 x 34 mm (L x D)
76-0236	Holder for Startle Reflex, Rat up to 200 g, 200 x 64 mm (L x D)
76-0676	Holder for Startle Reflex, Rat up to 250 to 300 g, 255 x 74 mm (L x D)



Panlab Holders for rodents are commonly used in behavioral experiments involving animal contention, immobilization or a limitation of the animal movements/displacements, such as non-invasive blood pressure, tail-flick and startle reflex tests.

The holders are manufactured from Perspex cylinders mounted on a flat black Perspex base. All the models allow access through both both ends by opening the respective tilting door that is fixed by a screw at the upper part of the restrainer.

Animals can be immobilized by sliding the doors along the restrainer. A slot in the base of the door allows for the whole tail to be available for pulse transducer and cuff installation, IV drug administration or blood extraction.

Specially designed holders for startle reflex experiments are built on an open base allowing animal contact with the grid for delivery of shocks. Additional screws are available for a strong fixation of the holder on the grid to minimize any displacement due to the animal movements during the experiment.

The easy operation and convenient locations of the doors faciliate convenient manipulation of the animals during experiements. This also eliminates the need to drag them back and forth, which in turn protects them from associated foot injuries.

Available in 6 different sizes for all sizes of rat & mouse.

SEDACOM Software (Panlab)

SEDACOM is a polyvalent and straightforward communication software for stand-alone equipment.

- Polyvalent data transfer software
- RS232/USB communication
- Informative Experiment Header exportable in the data reports
- Runtime panels using tabular structure for saving time in the data post-analysis process
- Editable fields for Subjects and Groups information
- The data can be saved in a new experimental file (SED) and opened later for adding a new set of data
- Direct exportation to Excel, txt and htm formats for further data processing, statistics and presentation
- Configure & control your device (IR actimeter, Treadmill, etc.) directly from SEDACOM
- USB Installation and License key (everything included in 1 USB key)

ltem No.

Description

76-0406

SEDACOM Software V2.0



The SEDACOM 2.0 is a very easy, convenient and cost-saving data transfer software providing an ideal environment for visualizing the registered data on a computer and exporting them in a format that simplifies any further post-analysis processes. SEDACOM increases the functionalities of the devices, saving and listing automatically all the data of the current or stored sessions.

SEDACOM can be used with a wide range of Panlab products for measuring physiology and behaviour in small laboratory animals (motor activity, pain sensitivity, body temperature, memory etc.)

The name of SEDACOM comes from SErial DAta COMmunication, due to the direct communication via an RS232 serial port connection between Panlab devices and computers. Optional accessories allow use of an USB stick to conduct experiments with a laptop.

SEDACOM can adquire data simultaneously from up to 9 devices, limited only by the number of series ports available on the computer. An additional hub or board with serial ports (not included) can be installed to expand the number of connections. SEDACOM will automatically recognize the number of systems connected.

SMALGO System

The Small animal ALGOmeter (SMALGO) system is a quick and reliable instrument to assess threshold sensitivity of the animal when applying a progressive force. A MUST for osteo-arthritis and pain studies!

- Easy to use and reliable
- Works for both rats and mice
- Can be used to determine pain threshold with a progressive force
- Can be used to screen drugs with a given force

Item No.

Description

76-0600

Small Animal Algometer (0-1500 gr) Handled Version for Rodents



The Small animal ALGOmeter (SMALGO) system is a quick and reliable instrument to assess threshold sensitivity of the animal when applying a progressive force. A MUST for osteo-arthritis and pain studies!

The SMALGO system fits on your finger (thumb or index) and allows applying easily a force or pressure on the desired location. Designed for OA quantification, it is generally used on the knee joint or on the lumbar vertebrae for low back pain assessment.

The threshold sensitivity of the animal is quickly and reliably found when applying a progressive force, this threshold is immediately displayed on the electronic device in grams or Newtons. SMALGO is also used to apply a given force, or a set force, for screening purposes. The small size of the algometer and its positioning perfectly fitting the thumb, allows the operator to act as if he was applying the pressure directly with his own finger.

Each sensor fits both rat and mouse species, and includes two round ends—each with a different surface, to adjust the applied force on the respective species.

Suplied with:

- Carry case, mains adaptor 110/220 V
- Control unit and its sensor (cable is 1 meter long)
- 3 sensor tips 2,3,5 mm diam.
- Software BIO-CIS included to display force curves and transfert data under MS Excel data sheet
- RS-232-USB cable to plug it to a laptop under windows OS
- Footswitch to reset the display with hands free

For user owning the Bioseb Von frey (EVF3) or Pincher units: the SMALGO sensor is available as an "add on" part to their electronic, including the force calibration module ready to plug (SMALGO-SPIP)

SPECIFICATIONS

Specifications 76-0600

Measuring Range	0 to 1500 grams (15 N)
Sensitivity	1 gram or 0.01 N)
Tips	2, 3 or 5 mm in Diameter (stainless steel)
Sampling Speed	Automatically detect the response to pain at 1000 Hz
Overload protection	200%

Specifications	76-0600
Display	Extra-large to read both Peak (threshold) applied force and Current Force value.
Memory	SMALGO includes internal memory for 100 measures. Easy to use internal statistic package for quick check in between animal groups.
Output	to PC via RS232-USB and BIO-CIS dedicated software.
Power	from the Main or using the embedded rechargeable battery (8 hours)

Tail Flick Analgesia Meters (Panlab)

A sensitive test for studying the analgesic properties of pharmacological substances. It can also be used to evaluate basal thermal pain sensitivity or to study putative genetic differences among animals without drugs.

- Digital display
- Precise intensity light beam adjustment
- Optimal detection due to perfect alignment of heat stimulus and photo beam
- A light beam shows the point on which the heat source will focus
- Manual and remote trigger
- Groove for correct tail placement
- Automatic cut-off
- New optional Data Transfer software SEDACOM 2.0

Item No.	Description
76-0293	(LE7106) Tail Flick Analgesia Meter
76-0183	Holder, Mouse (15 to 25 gr)
76-0184	Holder, Mouse (25 to 40 gr)
76-0185	Holder, Rat (150gr)
76-0186	Holder, Rat (250gr)
76-0187	Holder, Rat (400gr)
76-0188	Holder, Rat (500gr)
76-0406	SEDACOM Software V2.0

Item No.

76-0294

Description

(LE7106T) Tail Temperature Recorder



DETAILS

This system features radiant heat applied on the animal's tail; when the animal feels discomfort, it reacts by a sudden tail's movement (tail flick) which automatically stops the stimulation and the timer for the measurement of the animal reaction time (period from the beginning of the stimulation until detection of the animal's response).

This test has proved particularly sensitive for studying the analgesic properties of pharmacological substances. It can also be used to evaluate basal thermal pain sensitivity or to study putative genetic differences among animals without drugs.

Description of the system

The Panlab Tail-flick Meter consists of a stimulation unit (containing the halogen lamp for the heat stimulus) and an electronic control unit. The system can be used for rats and mice of different sizes. The animals are placed with its tail protruding within a restraining tube on the platform of the Stimulus Unit.

The animal's tail is positioned on a slot of adjustable width equipped with a groove that guarantees a correct placement. A remote foot-switch controls the test start/stop allowing rapid hands-free experiments.

A photo beam with adjustable sensitivity detects the tail flick and the latency is automatically presented on a digital display on the Control Unit. Measurements of reaction time are given with a 0.1 precision. A cut-off time can be set to avoid tissue damage (by default: 20 s). The groove system for the tail and the adjustment of response sensitivity ensure optimum repeatability and reliability of results.

Restrainers

The animal has to stay completely still during the test so that the flick of the tail can be considered as a specific response to the thermal stimulus. A restrainer can be used for optimizing the inmobility of the animal in these conditions. The stress of the animal has also to be minimized during the test for minimizing the release of endogenous opioids that may alter the animal response. As the restraint conditions can be a stressful for the animal, a period of habituation is needed for the test. Experienced experimenters can perform the test without any restrainers.

SEDACOM software option

The new SEDACOM 2.0 version provides an easy and convenient way to visualize and export the data on a computer for further analysis. The SEDACOM software has to be purchased separately.

Tail-temperature recorder accessory

The tail-temperature recorder (76-0294) can be used for evaluating the temperature of the tail during the experiment.

SPECIFICATIONS

Specifications	76-0293	76-0294
Catalog Pages	G24	
Certification	CE	
Computer Requirements	Windows 95, 98, ME, NT, 2000, and XP	
Control Unit Depth	350 mm	
Control Unit Height	130 mm	
Control Unit Width	350 mm	
Material Composition	Methacrylate, halogen lamp	
Maximum Number of Stations	1 per computer (multiple setups available by request)	
Model Number	LE7106	LE7106T
Power Requirements	110V/220V, 50/60Hz	
SeDaCom Included	Yes]

Specifications	76-0293	76-0294
Simulation Unit Depth	140 mm	
Stimulation Unit Height	155 mm	
Stimulation Unit Width	400 mm	

Thermal Gradient test

The Thermal Gradient Test is one of the very few thermal nociception tests that is operator independent on freely moving rodents (mice and rat).

- Continuous thermal gradient established over a 120 cm long base plate
- Monitor 2 mice or 1 rat

Item No.	Description
76-0776	Thermal Gradient test €" 2 Mice/1 Rat, incl soft- ware, camera & support and Infrared thermome- ter for calibration
76-0774	Accessory - Kit to Upgrade Gradient Test to Two Thermal Choice Test



The Thermal Gradient Test has been described in Moqrich et al. 2005, and is one of the very few thermal nociception tests that is operator independent on freely moving rodents (mice and rat). A continuous temperature gradient (-4 to 65°C) is established over a 120 cm long base plate, on which the animal is free to walk. After the exploration period the rodent (mouse or rat) shows a distinct zone preference, or comfort zone.

We propose an automated instrument for your research on analgesia and nociception (especially suitable for research on alodynia), with a temperature gradient stable over the surface and over time, allowing to identify the preferred temperature zone. Two instruments models will test independently and simultaneously 2 mice or small rats (1 adult rat).

The accompanying software, coupled to a video camera, displays for each animal the time spent per time period in each temperature zone, together with overall travelled distance.

The encrypted data and the video images are recorded synchronously in real time during the nociception experiments. This allows the operator to replay and check the animal behaviour at any time and remotely, and also to comply with Good Laboratory Practice (GLP).

Thermal Place Preference

For testing animal sensitivity to pain resulting from exposure to heat or cold.

- Easily monitor thermal place preference and nociceptive thresholds
- Unrestrained animals allows for maximum accuracy
- Automatic Detection Software eliminates the user subjectivity

Item No.	Description
76-0475	Thermal Place Preference - Upgradable to the GRADIENT test: incl. everything for the test + camera/support and software
76-0785	Compact Thermal Place Preference Set-up (can- not be upgraded to GRADIENT test) - Complete : incl. everything for the test + camera/support and software
76-0775	Kit to upgrade T2CT to GRADIENT (corridor, soft- ware + camera grand angle)



This behavioral assay will allow monitoring of temperature preferences, nociceptive thresholds and investigate the role of a given gene or compound on these thresholds.

Presentation

The Thermal Place Preference Test, or 2 Temperatures Choice Nociception Test, is an operator independant test to study pain thresholds in rodents (mouse and rat) by assessing temperature preference (comfort zone) - a brand new tool opening new fields of investigation for your analgesia/nociception research.

As advised by A. MOQRICH, and published in Moqrich et al (Science 2005, 307: 1468-72), the Thermal Place Preference Test allows researchers to work on unrestrained animals (mice and rats) let free to choose their preferred position (comfort zone) between 2 compartments set at different temperatures. This behavioural assay will allow monitoring temperature preferences, nociceptive thresholds and state in the role of a given gene or a compound on these pain thresholds associated to cold and hot stimulation.

Unlike the cold/hot plate test, it is investigator-independent: using the traditional plates, an operator can measure the reaction time of an animal (mouse or rat) exposed to a certain temperature. The "two Temperatures Choice Test" will return a nociceptive response without any action from the operator, and

the obtained value is a temperature or a temperature range indicating the sensitivity of the animal (mouse or rat) resulting to the exposure to different stimulations (cold or heat)

You have the possibility to either observe one rat at a time or two mice simultaneously and independently, making the Thermal Place Preference system remarkably attractive for your analgesia research.

Dedicated software

The optional, dedicated T2CT software is a convenient tool allowing the operator to define the temperature of each zone, and easily, automatically obtain the position & presence time of each animal (mouse or rat). Results can be transferred directly as an Excel file or as a txt format. Software is compatible with Windows 7/8, in both 32 and 64 bits, and comes with 3 USB cables and a webcam.

Parameters measured

- Time spent in each temperature zone (abs. and %)
- Time of each zone trespassing
- Temperature of each zone
- Activity time of the animal (total or by zone)
- Distance run by the animal (total or by zone)
- NEW algorithm for tracking activity and detecting zone transitions
- NEW single window for all settings
- NEW improved electronics are more stable and result in faster temperature transitions

Available set-ups

The system is available in 2 different set-ups:

- The 76-0475 Thermal Place Preference set-up provides everything for the test (2 hot-cold plate units, camera/support and software) and is easily upgradable to the GRADIENT test by adding the 76-0775 Upgrade kit.
- The 76-0785 Thermal Place Preference set-up is a cost-saving set-up providing everything for the test (1 single unit with 2 plates, camera/support and software) but that cannot be upgradable to the GRADIENT test.

SPECIFICATIONS

Specifications

76-0475

Temperature Range	-3°C to +55°C (room temperature 20 to 25°C)
Temperature Accuracy	± 0.5°C
Max Overshoot	0.5°C
Power Supply	150 Watts, 120/240 VAC

Specifications	76-0475
Dimensions	(L x W x H) 32 x 57 x 45.5 cm (12.6 x 22.4 x 17.9 in) including cage
Animal Cage	330 x 165 x 300 mm (13 x 6.5 x 11.8 in)
Weight	14 kG
Animal Cage	Material Clear plexiglass
Time and position measurement	1s accuracy, video analysis
Software	Windows® 7/8 32/64 bits PC with 512 MO RAM with 3 USB ports

По вопросам продаж и поддержки обращайтесь:

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